

Item for Information

Subject: Report of University Internal Audits
May - June 2012

Attached is the report of activities completed by the Office of University Audits for the period **May – June 2012**.

Included in the report are a:

- Summary of each audit report issued during the period, including Management's Corrective Plans. These audits were presented at the Regents' Finance, Audit, and Investment committee meeting in July.
- Summary of each follow-up review report issued during the period, including the actions completed by management. Follow-up reviews are designed to provide assurance that Management's Corrective Plans have been implemented, are working as intended, and are sustainable.
- Table of open audit issues as of **June 30, 2012**, including estimated completion dates.

If you have any questions or would like additional information, please contact me at 647-7500 or by e-mail at jmoelich@umich.edu.

Respectfully submitted,



Jeffrey M. Moelich, Executive Director
University Audits

University Audits
May – June 2012
Summary of Reports Issued

ORIGINAL REPORTS

Campus

University of Michigan School of Public Health Office of the Dean
Report issued May 25, 2012

#2011-211

The University of Michigan School of Public Health (SPH) is a leader in public health research, teaching and services, and ranks among the top five public health schools in the nation¹. Its mission is to create and disseminate knowledge that will promote health and prevent the spread of disease worldwide, particularly in areas that suffer disproportionately from illness and disability. SPH has been instrumental in establishing external partnerships, centers, and programs that support its mission to promote health. University Audits performed an operational review of the SPH central business functions administered by the Dean's office. The Dean's office oversees five academic departments, multiple centers, and operational support areas. In January 2011, SPH appointed a new dean who was the former SPH Senior Associate Dean.

975 students were enrolled in fall 2011, an increase of almost 8.5% over the previous semester. SPH offers four types of graduate degrees: Master of Public Health, Master of Health Services Administration, Master of Science, and Doctor of Philosophy. The Rackham Graduate School administers the latter two degree programs. SPH recently added a new degree program, Master of Health Informatics, which is a joint degree program with the U-M School of Information.

The audit focused on key processes in the SPH central business office to determine if policies, procedures, and the internal control structure provide sufficient oversight and guidance to academic departments and support areas. University Audits interviewed management and administrative personnel, reviewed SPH reports, records, and documents, and performed tests to assess current practices and internal controls in the following areas:

- International Internship Placement Program
- Student Admissions
- Financial Aid
- Financial Monitoring and Oversight
- Gifts, Restricted Funds, Grants, and Discretionary Funds
- Effort Reporting and Timekeeping
- Procurement, Travel, and Hosting

SPH has processes for preparing budgets and monitoring payroll and financial activity. Standards for admitting new students, awarding student financial assistance, and documenting processes need to be enhanced school-wide. Recent turnover in the SPH Office of Academic Affairs (Academic Affairs) presents a good opportunity for SPH to review practices to strengthen internal controls and oversight in admissions and unit administered financial aid. Control risks and recommendations are discussed below.

¹ U.S. News & World Report LP – 2011 Public Health Graduate Schools Ranking (<http://grad-schools.usnews.rankingsandreviews.com/best-graduate-schools/top-health-schools/public-health-rankings>)

Risk and Control Discussion

- **Financial Assistance** – The School of Public Health awards approximately \$3.6 million a year for school-based financial assistance. The financial award funds are allocated by the Dean’s Office, to each academic department. Departments are expected to use the financial awards primarily as a recruiting tool, as part of their annual admission process. Awards that would otherwise go unused can be offered to returning students for their final year to assist in retention efforts. The Dean’s Office provides annual guidelines for awarding school-based financial assistance. Each academic department is responsible for determining which students will receive school-based assistance, consistent with the published guidance. Annually, financial award decisions are forwarded to SPH Academic Affairs for processing. University Audits noted several inconsistencies in the process:
 - Several awards were made to students who were not primarily enrolled in SPH courses. Guidance is not clear regarding the level and type of required student course load.
 - The Dean’s Office expectation is that financial awards are used for new student recruitment. University Audits noted that some awards were given to returning students.
 - SPH Academic Affairs does not have a formal process for reviewing and monitoring financial awards to ensure awards meet specified criteria.

The Dean’s office should:

- Work with departments to develop mutually agreed upon processes and parameters for evaluating potential award offers.
- Clarify and document all requirements, including program enrollment, minimum number of SPH credit hours of study needed for consideration, and processes for requesting and documenting exceptions.
- Develop and document formal, independent review processes to verify scholarships are awarded in accordance with Dean’s Office expectations.

Management Plan – SPH is in general agreement with Control Recommendations provided in this section of the audit. The Dean’s Office will utilize the new internal control matrix, gap analysis, and written procedure templates developed by the Office of Internal Controls for unit administered financial aid to address the control recommendations. A committee will be formed drawing representation from all five academic departments and from the Dean’s Office. Membership will include the Assistant Dean for Finance and Administration, two department administrators, two student services coordinators, a faculty member who serves as an admissions chair, and an individual from SPH Academic Affairs. By working through this new internal control process, SPH will address the recommendations outlined above.

- **Admission Practices** – The admission process is fragmented between the individual departments and Academic Affairs. There are no common admission files that contain complete documentation. Admissions committees within SPH academic departments are responsible for reviewing applications/supporting documents and recommending applicants for admittance to graduate programs. Academic Affairs staff performs final reviews of selected and rejected applicants, processes admissions, and sends rejection notices. During a review of admission practices, University Audits noted inconsistencies in following up on pre-enrollment requirements. Several students were admitted and allowed to enroll in classes although Academic Affairs had not received confirmation students had satisfied math requirements or submitted official GRE scores, transcripts, or other required documentation. There is no clearly designated responsible party for following up to ensure that admitted students have achieved all prerequisites prior to enrollment.

To ensure consistency and transparency of SPH admission practices:

- Initiate meetings between Dean's Office staff and department admission chairs, staff, and a student representative to gain an understanding of current admission practices (i.e., make-up of admission committee, committee selection and rotation practices, application review process, decision models, documentation).
- Develop clear, school-wide admission process expectations and documentation and review standards, including a process for common admission files.

Management Plan – SPH uses a holistic approach to make admission decisions based on an assessment of the applicant's overall background, interest in the field, relevant skills, and degree of potential success in the field. Each department has an admissions committee that reviews each application, makes an admission recommendation, and returns the decision to Academic Affairs. The Academic Affairs admissions staff performs a final review to verify consistency among the admitted or denied applicant pool (i.e., GPA, GRE scores, recommendations/work experience). Academic Affairs admissions staff maintains an Excel spreadsheet that contains admissions data, decisions, and comments/justification for admission decisions that can also be viewed by department student services representatives. All application materials are accessible electronically in WebNow, and student files can be retrieved by their UMID. SPH will develop transparent school-wide admission process practices and protocols:

By October 2012, Academic Affairs will request each department admissions chair to provide an updated list of their committee membership, their roles and responsibilities, and a description of committee selection and rotation practices. Academic Affairs will also ask admission chairs to provide written documentation of their application review process, selection criteria, and related policies. Academic Affairs will combine submitted documents to create a single “SPH collective admission processes and policies document” organized by department. Once the collective document is created and disseminated, Academic Affairs admissions team will convene a meeting with all the department admission chairs to discuss best practices. In October of each subsequent admissions cycle, department chairs will be asked to update committee membership and any changes in admission processes or policies. SPH admission processes and policies document will be available to department admissions chairs and student service representatives on the Academic Affairs shared drive.

Beginning with the fall 2012 semester, Academic Affairs will require all incoming students to submit official GRE scores, transcripts, and all other required documents no later than October 15th of each admissions cycle. Failure to do so will result in a hold on the student's ability to register for winter semester classes. SPH registrar will notify students who have not complied by October 15 that they will not be permitted to register for winter term until all documents are submitted.

- Internship Funding – In 2011, the Dean's Office provided \$65,000 of financial assistance to 26 SPH students participating in SPH's Global Health Internship Program (Program). The Program provides financial support to help students gain practical health experience by participating in public health organization-sponsored internships. SPH faculty score internship applications and Academic Affairs staff review and process awards. A review of scoring practices showed inconsistencies in assigning scores to applications and translating scores into funding decisions. Academic Affairs lacks documented policies and procedures for reviewing and monitoring the Program. SPH has developed a new scoring system that will be implemented for fall 2012 awards.

Management Plan – The Global Public Health administrative staff, in collaboration with SPH Academic Affairs, implemented many changes for the 2012 Global Health Internship funding process. Changes include a more detailed funding announcement and budget template, a timeline and process for evaluating student applications, and a new scoring system that reduces scoring inconsistency and allows for more commentary. On the 2012 Funding Application Review form, eight separate criteria are judged on a scale from 0-3 points, with space to provide justification. Reviewers are also asked to give an overall assessment of the application and an indication of whether they believe the project should definitely be funded, possibly funded, or not funded. Any disagreements on internship funding will be discussed and resolved by a subset of Global Public Health Steering Committee faculty who were not involved in the initial review. In addition, Global Public Health staff has instituted a tracking system in an Excel workbook with all relevant student internship information (e.g., student personal contact information, internship location and contact information, funding requested, review scores, amount of SPH funding received, and any funding from other sources) and will submit an annual internship funding award summary to Academic Affairs. Finally, at the conclusion of the internship experience, each student receiving funding is required to submit a report to Global Public Health staff.

- Conflicts of Interest and Conflicts of Commitment (COI/COC) – The University of Michigan allows and encourages outside activities and relationships that enhance the mission of the University. As a result, potential conflicts of interest and commitment are inevitable. University Standard Practice Guide (SPG) Section 201.65-1, *Conflicts of Interest and Conflicts of Commitment*, states faculty and staff are responsible for disclosing actual and potential conflicts and, when necessary, working with department administrators to develop conflict management plans. SPH's internal COI/COC policy requires faculty to disclose speaker fees and honoraria (\$1,500 and higher) received for presentations, keynote addresses, and consultations. During a review of COI/COC practices, University Audits noted:
 - SPH faculty and staff do not have an annual obligation or an effective reminder system to report conflicts; faculty/staff self-identify and self-report conflicts when they occur.
 - The Dean's office staff does not play an active role in managing conflicts disclosed as part of the sponsored research grant process.
 - Faculty members do not comply with SPH policy regarding the reporting of earnings from speaker fees and honoraria. University Audits' review found one faculty member, who received consulting/speaking payments from pharmaceutical companies, but did not report payments as required by SPH policy. Dean's Office staff stated faculty members have not reported any outside earnings in the last three years.
 - School policy allows faculty members holding full-time appointments to use up to four days a month for consulting activities; however, SPH lacks a well-defined and consistent methodology for accounting for and tracking consulting days.

Conflicts can be difficult to recognize given the myriad circumstances under which they may arise, particularly in health care research. Enhance COI/COC reporting and management practices by:

- Sponsoring and encouraging periodic training to help faculty/staff identify conflicts
- Developing and implementing a policy that defines consulting days and helps faculty properly classify consulting activity (i.e., what roles do location, activity/subject matter, number of hours away, and remuneration play in determining whether a faculty member will count the day, or part of the day, as a consulting day)
- Adopting robust disclosure requirements to ensure faculty meet the expectations of the University's Conflict of Interest policy. As a good practice, consider developing a mechanism for faculty to disclose:

- Actual and potential conflicts of interest and commitment for faculty and immediate family members
- Consulting days used during the year
- Speaker fees/honoraria received during the year
- Continuing to require faculty and staff to update disclosures during the year as circumstances change and new outside interest arise

Management Plan – SPH is in general agreement with the control recommendations provided in this audit.

- The current policy requires disclosure of conflicts speaker fees/honoraria as they arise, and a reporting of consulting days on an annual basis. SPH will employ a modified M-inform, on-line system currently being developed by Office of the Vice President for Research to address changes in Conflict of Interest reporting required by the Department of Health and Human Services. To assure compliance, all faculty will be required to disclose before submission or receipt of funds from any grants through mechanisms integrated into the UM's eResearch system. If a faculty member is not actively receiving or applying for funding, this disclosure will be included in the annual Merit Review form required of all faculty.
 - SPH's current policy defines consulting activities as those professional services for which one receives compensation. SPH plans to adopt a more definitive statement based on a College of Engineering model. The change is pending faculty approval.
 - Upon approval of the policy change, periodic training should occur. Annual notice will be included in the Merit Review/Reporting system.
- Timekeeping Practices – SPH's central timekeeper understands assigned responsibilities and processes associated with reviewing and approving time data, reconciling Gross Pay Registers (GPR), processing appointment changes and salary supplements, and performing non-payroll related activities such as creating job postings, reconciling monthly Statements of Activity (SOA), and uploading Dean's office scholarship awards into the University's student administration system. Currently, there is a concentration of duties that needs separation and documentation.

Management Plan – SPH is in general agreement with Control Recommendations provided in this section of the audit. Responsibilities for payroll review and reconciling Gross Pay Registers will remain with the individual who performs this task for the majority of the School's general fund accounts. Payroll processing and job creation functions for all Dean's Office personnel will be shifted to another individual. Tasks including job postings, temporary appointments, appointment changes, rate changes, and additional pay processes will be part of this shift. The Dean's Office Financial Lead Manager will increase the frequency of his review of SOA reconciliations and supporting documentation.

Procedure manuals will be developed for staff handling the duties described above including specific details on what tasks are completed, when and how those tasks are completed, and timelines for initiation and completion of tasks. For complex tasks, additional documentation including who to contact, data sources, review and approval processes, etc. will be developed. Finally, the practice of having a separate email approval process supporting the single online time report approved by a subordinate has been discontinued.

University Audits will conduct a follow-up review in the third quarter of fiscal year 2013 to assess management's progress on action plans.

The Center for the Education of Women (CEW) was established at the University of Michigan in 1964 as a charter member of the Continuing Education for Women Movement along with programs at the University of Minnesota, Sarah Lawrence College, Radcliffe College, and several other institutions throughout the country. Minnesota, Sarah Lawrence, and Radcliffe were at the forefront of the movement and helped influence the founders of CEW as they prepared proposals and sought funding to start the Center.

The majority of early CEW participants sought guidance on career choices, education opportunities, and support for navigating the admissions process. To meet this need, CEW (originally the Center for the Continuing Education of Women) operated with a three-part mission of service, advocacy, and research that focused on the needs of women students and women returning to work or school. The initial proposal for the program set forth the following objectives:

- Provide information about University programs and requirements to women students who wish to resume their education.
- Advise students on educational planning and the objectives of their education.
- Work with the University to make programs more flexible to address the specific needs of non-traditional students.
- Provide programs to motivate women undergraduates and assist young mothers in the continuation of their education.

Today, CEW fulfills its mission by providing counseling, workshops, scholarships, and financial aid aimed at educating and assisting non-traditional students and members of the community at large on a variety of topics, including:

- Returning to school
- Employment searches
- Money management from college through retirement
- Transferring from a community college to the University

CEW also serves the University and local community by underwriting guest lectures from leading scholars and activists and holding conferences on key women's issues.

The primary objective of the audit was to evaluate key financial and operational controls to ensure CEW is in compliance with University policies and procedures and applicable state requirements. To fulfill this objective, we evaluated several control areas:

- Management oversight
- Credentialing and conflict of interest/conflict of commitment
- Counseling/workshops
- Development
- Procurement
- Reporting and record keeping
- Payroll and benefits
- Cash handling

Risk and Control Discussion

CEW has established solid controls to manage the following processes:

- Staff credentials and conflicts of interest and commitment
- Donor funding and donor intent

- Scholarships
- Payroll, procurement, and account reconciliations

The Center is in the process of streamlining and strengthening management of the counseling function with the addition of a new counseling management system. In discussions about CEW's preparation for installation of the new system, University Audits noted that they had prepared an implementation plan. Post-migration controls will be assessed during the audit follow-up. Opportunities to improve the control environment are discussed below.

- Critical Difference Grants – CEW provides non-traditional students with emergency funding in order to help them remain on target to graduate from the University. CEW defines non-traditional student as fitting into one or more of these categories: twenty-five and older, work 20 or more hours per week and are financially independent, have children or dependents other than a spouse, are single parents, and/or have transferred from a community college. The counseling staff works closely with the Office of Financial Aid to ensure students receive the maximum assistance available through the program. In fiscal year 2011, CEW awarded almost \$213,000 in critical difference grants. From 2001 through 2010, 90% of the students receiving critical difference aid have either graduated or are working on their degrees.

A review of CEW critical difference grants identified several opportunities to strengthen controls:

- Grants tested contained several approaches for documenting rationale for the approval of awards including emails and handwritten notes. It was not always possible to determine whether the application met the criteria established for awarding a critical difference grant.
- The threshold for Associate Director's approval is \$1,000. As the average of critical difference awards are approximately \$1,800, the Associate Director is approving 80% of the grants, many of which are routine requests.
- CEW does not require documentation to support the amount requested by the grant recipient (e.g., grants to assist with utility bills are not supported with billing statements).
- CEW does not log all requests for critical difference grants. Approved requests are logged; a record of denied requests is not maintained.

Management Plan – CEW will:

- Create a form, in Titanium (new counseling management software), designed to both track a participant's critical difference history/status and indicate the reasons for awarding or not awarding a requested grant. Requests for approval for large grants (\$1,500 and higher, see below), or those that seek exception to the standard criteria, will be submitted to the Associate Director via the Titanium notes function, and rationale for granting exceptions will be captured there. We will review grant spending, exceptions, and general recipient data monthly.
- Raise the higher authority approval requirement from \$1,000 to \$1,500.
- Work (in consultation with the Office of Financial Aid and Office of Internal Controls) to establish a formal policy for supporting documentation submission.

The management response to the first bullet will address the issue of having a record of all grant requests, approvals, and denials. In addition, we will track "pending" requests (e.g., sometimes a grant is pending, awaiting further action from the student, and the student does not follow through).

- Cash Handling – The Center eliminated credit card processing by transitioning to an online registration and payment service. This reduced the risk of fraud and identity theft associated with managing credit card information. Clients who do not want to use the online system may pay their fees by cash or check. The total amount of cash and checks in recent years averages less than \$10,000 per year.

The Center's cash reconciliation paperwork was complete and fully documented. The Administrative Assistant completes the reconciliations and prepares the deposits. The Business Manager reviews and approves the reconciliation.

An opportunity exists to improve controls over deposits of cash and cash equivalents. The audit revealed several instances of deposits containing cash and checks held for up to a month and then deposited as one large deposit. Per the Standard Practice Guide Section 519.03, *Cash Management Policies*, all funds collected by any unit or department of the University must be deposited into a University account on the date of collection. When this is impractical and the total deposit is less than \$500, the deposit may be made within one business day of collection. Timely deposits lower the risk of forgotten, lost, or stolen cash and checks.

Management Plan – Deposits will be made in a more timely manner by creating more depth in the cash handling process. Cash receipt tickets and deposits will be made as soon as cash or checks are received. A back-up staff member will be designated to maintain the timeliness of this process. Senior staff member(s) will also be trained to reconcile and approve the deposits. These changes will allow the process to take place in a timely manner without being impacted by absences.

- Policies and Procedures Documentation – Each functional area is responsible for preparing and revising policy and procedure documents. Written procedures are available for front office staff functions, scheduling counseling sessions, managing the critical difference grant program, business office functions including account reconciliations, and payroll. With the implementation of the new management software program, revising some of the documents is essential.

Management Plan – We will review existing policies and procedures manuals annually as part of the Internal Controls process and update as needed. Other areas will be reviewed and formal documentation created, as needed.

CEW has implemented significant changes and process improvements over the past year while maintaining a strong control environment. The implementation of a new counselor management system will provide additional opportunities for enhancing controls over counseling and critical difference grants. University Audits will conduct a formal follow-up of the outstanding issues during the second quarter of fiscal year 2013.

Automotive Research Center Fiscal Responsibilities
Report issued June 25, 2012

#2012-217

The Automotive Research Center (ARC or the Center) is a University-based U.S. Army Center of Excellence for advancing the technology of simulation of military and civilian ground vehicles. ARC creates a collaborative environment for researchers from a number of universities, U.S. Army TARDEC (Tank Automotive Research, Development, and Engineering Center), and industry. ARC was established in 1994 at the University of Michigan. U-M serves as the lead for a group of academic institutions participating in the Center. ARC has evolved over the years to meet the research needs of Army

sponsors; partners now include Wayne State University, Oakland University, the University of Iowa, Clemson University, and Virginia Tech.

ARC administration is managed by the Department of Mechanical Engineering, which is part of the College of Engineering. ARC's annual budget consists almost entirely of federal funding that is granted on a yearly basis by the U.S. Army TARDEC. The process of developing the annual budget consists of gathering information on up to 25 individual projects under the direction of many principal investigators (PIs). Individual budgets are prepared for each segment and the entire package is presented to TARDEC for review and approval. Each individual project is given a unique project number for tracking purposes. Tracking of budgeted amounts is done via a departmental supplemental system at Mechanical Engineering, which is synched and reconciled with M-Pathways information. The Center Administrator prepares monthly reports of consolidated information using information extracted from M-Pathways reports. The resulting report is then placed on C-Tools for review by the individual PIs, the ARC Director, and TARDEC.

The contract with TARDEC requires cost sharing by the University. Cost sharing covers some administrative personnel, graduate student research assistant costs, and equipment. Individual shortcodes are set up for the cost sharing component. The information is reported in C-Tools as part of normal monthly reporting.

ARC emphasizes energy-efficient propulsion systems for ground vehicles, particularly those employing hybrid powertrains. Alternative fuels add a new dimension to research on advanced combustion engines. Research at ARC addresses a broad set of issues pertaining to design, analysis, and optimization of ground vehicle systems. Work is organized in the areas of:

- Safety and performance enhancement for handling, steering, ride mobility, and remote piloting
- Comprehensive human hardware simulation capability
- Simulation and optimization methods for decreasing weight of military ground vehicles while increasing survivability, reliability, and durability
- Energy conversion options
- Comprehensive military vehicle performance and evaluation systems

University Audits evaluated the adequacy and effectiveness of controls governing the following processes in ARC:

- Administration
- Grant management
- Financial/Human Resource management
- Asset management (including data)

Audit procedures included interviews with ARC personnel and analysis and testing on a sample basis of contracts, grants, procurement, expense reports, cash receipts, timekeeping, and payroll.

Risk and Control Discussion

- Administration – The Senior Research Administrator/ Manager assigned by Mechanical Engineering to the Automotive Research Center acts as the Center Administrator for ARC. This individual reports directly to the Department Administrator for Mechanical Engineering and has a dotted-line reporting relationship to the ARC Director to whom the position reports functionally. This reporting relationship is fragmented with responsibility for functions split between ARC and Mechanical Engineering Administration.

The size of the grant that primarily funds the Automotive Research Center warrants a full-time Center Administrator who would report to the ARC Director. Distribution of Center functions between the Center Administrator and Mechanical Engineering Administration should be reexamined. Given the funding model for ARC, grants management and financial management are closely linked. Because direct knowledge of Center activities is required for certain key activities, control over these activities should remain the responsibility of ARC administration.

The Center Administrator would be responsible for:

- Grant administration, including approval of all expenditures (expense reports and procurement) assigned to shortcodes associated with the grant and all sub-grants
- Secondary approval of all timesheets (with initial approval done by immediate supervisors)
- Preparation of consolidated grant reporting on the grant for the federal government
- Asset management oversight
- Preparation and review of key financial reports with the ARC Director and individual principal investigators (PIs)

Other administrative functions, which do not require direct knowledge of day-to-day Center activities, can be performed by Mechanical Engineering Administration to ensure proper oversight and adequate segregation of duties. These activities include:

- Reconciliation of the Statement of Activity and Gross Pay Register
- Handling of cash receipts
- Processing of procurement transactions
- Employment processing

Management Plan – The Center Administrator’s departmental responsibilities have been removed, and her reporting relationship has been adjusted as suggested. She now reports directly to the Center Director with a dotted-line reporting relationship to the Mechanical Engineering Department Administrator. The Administrative Assistant in the Center also now reports directly to the Center Director. This may change in the future once the Director is satisfied with the realignment of responsibilities.

The Center Administrator’s primary responsibilities will include grant administration, secondary approval of timesheets, and financial oversight as described in this recommendation. Asset management will be handled by the ARC Program Manager, who reports directly to the Director and is knowledgeable about ARC equipment utilization and location. The Center Administrator will work closely with the Program Manager to maintain the proper documentation for asset management. Some of the financial report preparation responsibilities will be transferred to the Administrative Assistant, while the Center Administrator will be responsible for final review. In addition to providing separation of duties, this will ensure that more than one individual understands how to complete these reports so that our sponsor responsibilities can be met in a timely manner. To provide additional backup, the Mechanical Engineering Business Manager will also be trained on the required sponsor reporting.

Statement of Activity reconciliation will remain a responsibility of ARC staff, and will be completed by the Administrative Assistant. The Center Administrator will be responsible for review of the statements and preparation of reports for the director. She will meet monthly with the Director to review both detail and summary reports for both parent and sub-accounts.

- Grant Management – Since ARC is funded primarily on federal funds granted on a yearly basis by TARDEC, there is a very close relationship between ARC administration, grants management,

and financial management. Management of federal grants is a complex process, characterized by a number of key responsibilities:

- Identifying allowable and unallowable costs
- Requesting reimbursement from federal agencies
- Applying prevailing wage rates
- Acquiring equipment or real property
- Fulfilling costsharing or matching requirements
- Preparing timely financial reports
- Monitoring subrecipients' spending
- Retaining financial documentation
- Preparing for audits
- Establishing separate chartfields in M-Pathways
- Monitoring spending and availability of grant money
- Managing transfers, re-budgeting, and overruns
- Closing out an award

The grant management function at ARC is split between ARC and Mechanical Engineering Administration. ARC's Senior Research Administrator/Manager (Center Administrator) reviews the Statements of Activity to ensure that the grant's finances are adequately managed and controlled, prepares monthly reports of consolidated information for grant sponsors using information extracted from M-Pathways reports, and monitors cost sharing. Mechanical Engineering is responsible for other key areas including review of expenses (including travel) and monitoring completion of effort self-reporting. This can allow reviews, approvals, and oversight to be performed by areas that are not close enough to the actual day-to-day activities on the grant, resulting in less effective oversight. University Audits' review highlighted issues in several areas that are symptomatic of these proximity and span of control issues:

- In order to manage allowable and unallowable costs, best practice for monitoring and reporting on grants includes line-by-line reconciliation of expenditures to source documentation and management approval of the reconciliation process. University Audits reviewed the Statement of Activity (SOA) reconciliation process and documentation maintained by ARC and noted that reconciliations are not well documented and source documentation was not included in with the SOAs on file.
- University Audits reviewed a sample of individual expense reports and found that travelers are not submitting their own expense reports, the reports are not always submitted on a timely basis, and there is no evidence that approvers are reviewing receipts.
- Each month, the Center Administrator manually compiles a report that is required by the sponsor containing expenditures and encumbrances against the grant. A report summarizing cost sharing is also included. The review of this process indicated that only one individual within ARC or Mechanical Engineering has been trained to compile this report. When the ARC Center Administrator was out on extended leave, the reports were not completed or provided to the sponsor.
- Subrecipient monitoring is the process used to review a subrecipient's compliance with the requirements of a federal program, applicable laws and regulations, and stated results and outcomes. Monitoring includes review of subrecipient's invoicing to ensure that program fund expenditures are in accordance with federal requirements. A review of source documentation for payments indicated insufficient supporting documentation for the invoices from subcontracting universities. No detail was provided for line items for equipment, materials, travel, tuition assistance, or labor hours.
- University Audits found several incidences of retroactive salary distribution changes greater than 120 days for which the Center Administrator was unable to provide

documentation supporting the justification and approval. University and federal policies require prompt cost transfers to grants and contracts. Transfers of salary expenses are subject to additional scrutiny and must be well justified. All retroactive transfers must be reasonable, allocable, and allowable.

Management Plan – As noted in the previous section, the Center Administrator will be relieved of her departmental responsibilities, allowing more time to review ARC activities. Further, we are working with Information and Technology Services (ITS) and the Sponsored Projects Advisory Team to adopt the Real-Time Financials college-wide. Mechanical Engineering's Business Manager has been a key member of the planning team. This will be rolled out as ITS implements some of the functionality that we required for good project management, and they are actively working on that.

The department has clarified the proper management of documentation and the Mechanical Engineering Business Manager will work with the Center Administrator to ensure the establishment and continued maintenance of proper procedures. Along with the adoption of Real-Time Financials, the department is investigating appropriate methods of electronic recordkeeping, both statements and related documentation.

Sub-projects/grants will be monitored more closely than in the past, and the Director will be given more detailed information as noted in a previous section.

- **Financial Management/Oversight** – At the Center, the ARC Director has overall responsibility for the ARC research project, with a series of co-PIs being responsible for parts of the grant and related sub-grants. Consistent with U-M policy, it is the responsibility of Center management to ensure regular monitoring of budget versus actual activity and to explain all budget variances in Center financials. Since the bulk of ARC funding comes from federal grants, Sponsored Programs places the responsibility for financial management in the hands of the principal investigator who has ultimate authority over the project including ensuring funds are spent appropriately and in accordance with sponsor guidelines. Since the ARC Director is the principal investigator for the federal government grant primarily funding the center, the ARC Director has the following key management reports available to identify outliers and monitor trends:
 - Statement of Activity
 - Gross Pay Register
 - Voucher Detail
 - Project/Grant Budget Status

A review of processes supporting ARC expenditures revealed that the ARC Director is reviewing a compilation report prepared by the Center Administrator each month but only reviews detailed reports on an exception basis.

Management Plan – This recommendation has been addressed in the previous section. The Mechanical Engineering Department Administrator or her delegates will provide training and oversight to ensure that appropriate current practices are followed on a timely and sustained basis and that process changes described in this audit response are successfully incorporated.

- Asset Management – The majority of the assets in ARC are purchased with federal funding; including some assets subject to export controls². The Center Director approves all equipment purchases over \$5,000. The federal grant terms require ARC to maintain a database of all tangible property and equipment purchased with federal funds with an acquisition value greater than \$5,000. The Center meets this requirement by maintaining a database in C-Tools, which is accessible to certain TARDEC individuals.

University Audits did a comparison between this database and the M-Pathways asset listing and performed a review of selected items on ARC's database. In some cases, the M-Pathways official equipment reports did not match the database maintained by the Center. None of the equipment reviewed had any asset tags attached. In addition, serial numbers and manufacturer could not be matched. No disposals were listed on the M-Pathways Retired Assets report; however, a number of items have been listed as decommissioned by the unit that have not been moved to Property Disposition and the location of the assets was not tracked.

Management Plan – Because the ARC Program Manager is more familiar with ARC equipment than the Center Administrator, he will take primary responsibility for ensuring that equipment is tagged, its location is known, and that the disposal of surplus equipment is handled appropriately. He will work with the Center Administrator to ensure the accuracy of the equipment inventory.

In addition, Property Control dispatched an Inventory Coordinator to locate and re-tag all Center equipment in April 2012.

University Audits will follow up on the status of action plans during the second quarter of fiscal year 2013.

University of Michigan-Dearborn College of Engineering and Computer Science
Report issued June 29, 2012

#2012-302

The UM-Dearborn College of Engineering and Computer Science (CECS) was established in 1962 and has since graduated over 10,000 students. In addition to undergraduate and graduate programs, CECS offers Engineering Professional Development (EPD) services for internal and external groups. EPD is responsible for managing the CECS Distance Learning Network (DLN), CECS graduate certificate programs, and corporate onsite and organizational learning programs for professionals. The DLN allows students to view recorded classroom lectures, participate in group projects, submit assignments, and receive feedback from instructors.

CECS has four academic departments:

- Computer and Information Science
- Electrical and Computer Engineering
- Industrial and Manufacturing Systems Engineering
- Mechanical Engineering

A faculty chair leads each department. Departments are responsible for unit-level activities such as managing research projects, administering gift funds, and processing graduate admissions.

² Items covered by U.S. federal government laws and regulations that require federal agency approval before the export of controlled items, commodities, technology, software, or information to restricted foreign countries, persons and entities (including universities).

Several CECS functions are handled centrally by the UM-Dearborn Office of Student Accounts and the Office of Registration and Records. Collaboration with the Office of Financial Aid is important as CECS maintains restricted and unrestricted funds for CECS student tuition grants, scholarships, and fellowships. In fiscal year 2011, approximately \$534,000 was awarded to CECS students. There are three offices in CECS dedicated to assisting engineering and computer science students:

- *Academic Advising* – Staff provide students with information, advice, and assistance to enhance their academic and career success.
- *Cooperative Education* – This voluntary educational program enables juniors and seniors to alternate semesters of full-time study with semesters of full-time paid employment in their field, allowing them to graduate with practical, industry experience.
- *Development* – Works in conjunction with the Office of Institutional Advancement to develop educational partnerships and further the CECS mission. The department looks to enhance current revenue and support goals that lead to continuous improvement of the college's facilities, programs, and educational experience provided to students.

Historically, the college's partnerships with local, major domestic automobile companies and suppliers have led to many educational and research opportunities for its faculty and students. Outcomes of these industry partnerships include the establishment of the Henry Patton Center for Engineering Education and Practice and the Institute for Advanced Vehicle Systems. Other institutes and centers at CECS include the Center for Lightweight Automotive Materials and Processing, and the Connected Vehicle Proving Center. These partnerships provide additional support, such as laboratory upgrades, scholarships, funded research projects, and asset gifts. CECS buildings house approximately \$17.5M in assets. Many of the assets are maintained in laboratories, which require regular inspections conducted by the UM-Dearborn Department of Environmental Health and Safety and Emergency Management.

CECS has several educational agreements with engineering institutions around the world, which have helped to attract global talent and further diversify the student body. Study abroad programs are also in place. Students can coordinate through CECS Academic Advising and the UM-Dearborn Office of International Affairs to participate in study abroad programs.

Information technology services and support are primarily handled by CECS staff. Engineering Computer Services (ECS) provides email, file, web, print services, access and authentication, license management, and server monitoring for all CECS departments. ECS also provides computer lab and desktop support for CECS departments. ECS consist of a Director, Faculty Advisor/Director, and three IT Administrators. Some CECS departments have additional IT staff.

The objective of this audit was to evaluate the adequacy of internal controls at CECS over the following areas:

- *Financial Processes* – timekeeping and payroll, financial aid, inventory management, restricted gifts, procurement, and credit card compliance
- *Educational Programs* – engineering professional development, cooperative education, distance learning courses, and international travel, hosting, and student programs
- *Operational Processes* – graduate admissions, oversight of institutes and centers, facilities access and safety, and faculty management
- *Compliance Requirements* – conflict of interest/commitment, effort reporting, subcontracts, and grant/contract management and compliance
- *Information Technology Processes* – configuration control and patch management, disaster recovery plan documentation, incident response procedures, storage of sensitive data, and network security controls

Risk and Control Discussion

- **Financial Oversight** – Financial oversight in CECS is highly decentralized. There is not a business administrator position responsible for providing oversight and sharing best practices for unit operations. Reports are generated from supplemental Excel systems to monitor financial activity in the units. These internal budgeting systems do not have documented procedures for their use and maintenance. The reporting needs of CECS could likely be addressed using the University's existing systems. Supplemental systems increase the likelihood for errors and create inefficiencies. There is no policy or other directive requiring management review of any financial reports other than the Statement of Activity and the budget report from the supplemental systems.

Opportunities exist to improve specific controls and unit operations:

- *Procurement* – Procurement processes are not always consistent with University guidelines.
- *Separation of Duties* – Individuals responsible for reconciling the Statement of Activity have system access to initiate and approve transactions, and are also responsible for creating the budget report used for monitoring.
- *Payroll* – The person approving electronic time reports is not a higher authority with knowledge of whether time entered is accurate.
- *Internal Control Certification* – CECS Dean's Office and individual units completed the internal control checklist without reviewing the management reports or completing an analysis of their internal control structure, as indicated by the certification.

Management Plan – We will hire a business manager reporting to the dean to function at the level of the college's Administrative Council. This individual will be skilled in managing budgets, planning facilities development, managing personnel, and providing official CECS data, reports, and surveys. The model for this position will be the Director of Resources, Planning, and Management in the College of Engineering on the Ann Arbor campus. To ensure that this individual has the necessary influence upon process controls at the College, administrative officers in the four college departments will have dual reporting lines – to the department chair and to the business manager. We are also in the process of hiring a facilities manager who will have responsibility for laboratory safety and day-to-day facilities issues in CECS. The facilities manager will report to the business manager.

- **Documented Policies and Procedures** - There is a general lack of documented policy and procedures for CECS operations, both centrally in the Dean's Office and in each of the academic units. Documented procedures promote consistent practices and efficiency, and provide employees a point of reference for decision making and training.

CECS does not have a new employee checklist or a terminated employee checklist to ensure appropriate steps are taken when employees are hired or leave the department.

A few examples of operational processes that should be documented include:

- *Budgeting* – Document the processes required to create the budget and monitor financial activity, including documented explanations for significant variances.
- *Faculty Human Resources* – Document processes related to recruitment, retention, and evaluation of faculty. Include guidelines and expectations for managing faculty grievances.

- *Emergency Loans to Students* – Establish and document a formal process for approving and disbursing emergency loans or other financial assistance to students. Include steps to communicate this assistance to the UM-Dearborn Office of Financial Aid.
- *Travel Fellowship* – Document the process for distributing the Prechter International Travel Fellowship to students. Include the appropriate methods for distribution and steps for timely communication to the Office of Financial Aid.
- *Computer and Information Science Co-Ops* – Document procedures related to the co-op proposal process, including retention of completed proposals.

Management Plan – The goals of this recommendation will be the primary responsibilities of the new business manager. The administrative officers in each department, the new facilities manager, the rest of the college staff, and the dean will assist him or her.

- Conflict of Interest and Commitment – The UM-Dearborn policy on conflicts of interest and conflicts of commitment outlines faculty members’ responsibility to disclose potential conflicts to their deans. To maintain confidentiality, UM-Dearborn uses a web-based disclosure system. Deans are responsible for reminding faculty of their obligation to report and evaluating potential conflicts to ensure they are appropriately managed. The online disclosure system has not been reviewed. The majority of CECS faculty has not disclosed whether or not they have any potential conflicts. Potential conflicts that have been logged into the system have not been properly evaluated.

Management Plan – We will implement a training program to better explain the need and the process for satisfying the requirement, and implement a robust tracking system involving everyone on the college’s Administrative Council.

- Training and Facility Safety – The UM-Dearborn Department of Environmental Health and Safety and Emergency Management (EHSEM) routinely inspects CECS. EHSEM maintains a spreadsheet of CECS labs; however, it is admittedly not a comprehensive listing of all labs. The spreadsheet details the status of lab inspections, dates of inspections, and dates of EHSEM communications to CECS personnel requesting an inspection. CECS principal investigators (PIs) are responsible for communicating with EHSEM to coordinate inspections. Coordination with approximately 40 PIs causes inefficiencies. Some PIs have been unresponsive to repeated inspection requests. As a direct result, several labs have incomplete inspections or unaddressed compliance requirements.

While EHSEM provides general lab safety training, PIs are responsible for conducting specific training for their project staff as required by grants/contracts. PIs are obligated to coordinate the training, ensure attendance listings are complete, and retain support for meeting educational compliance requirements. EHSEM provides training templates and offers assistance in conducting the trainings; however in some cases this assistance has been met with resistance.

EHSEM recently hired a temporary employee to work with CECS department chairs to identify all labs and PIs. The EHSEM Director initiated a revision of the current lab inspection model to include a ranking system and incorporate escalation procedures for unresponsiveness. To aid in these compliance efforts, CECS should assess the effectiveness of their current structure (i.e., PIs coordinating individually with EHSEM). When conducting the assessment, give consideration to designating a lab director to act as a liaison between the PIs and EHSEM as this structure has been successfully implemented at other schools and colleges at UM-Dearborn. If CECS chooses to keep the current structure, then it may be necessary for EHSEM to develop a

formal letter of agreement for PIs, which clearly lists the training expectations and compliance responsibilities of the PI. EHSEM should retain the signed letter.

Management Plan – CECS is in the process of hiring a facilities manager who will also be trained in and have responsibility for lab safety. This individual will work with our PIs to ensure their labs are safe, training is in place for those using lab facilities, and procedures are in place for hazardous events. This individual will serve as an interface between CECS and EHSEM.

- **Contracts, Grants, and Agreements** – CECS units manage their own grant activity. PIs are solely responsible for managing their research grant budgets. Central oversight or guidance for grant activity is lacking, which may contribute to increased administrative errors. For example, CECS does not consistently submit Form 7471 to Financial Operations for federal grants. Form 7471 is the form departments can use to communicate desired budget allocation for sponsored projects. For some projects, if this form is not completed, all of the funds remain in the “unallocated” budget category, which makes University system-generated reports less useful.

Management Plan – The new business manager, with the assistance of the department administrative officers, will implement uniform controls across the college for managing grants. Done correctly, the process will relieve faculty of some of the burden of grant management and help ensure timely submission of proposals and reports, and of timely grant expenditures.

- **Asset Management** – The CECS asset acquisition process is decentralized, giving department and unit administrators autonomy to purchase, track, receive, and reconcile assets. The Office of Financial, Budget, and General Services has responsibility for tagging assets and conducting biannual asset reconciliation. This review is heavily reliant on the department contact to be responsive to requests to tag received assets and provide accurate asset information.

Not all department contacts listed with the responsibility of asset tracking are knowledgeable about asset information or location. Lack of a thorough review of assets by department contacts and use of improper disposal methods has led to inaccurate asset information. Several assets selected for review from the most recent asset reconciliation in fall 2011, were found in the wrong location or could not be located. Testing also showed a number of assets were not tagged; some assets have remained untagged since 2006.

Management Plan – The new facilities manager, in cooperation with the business manager and the administrative officers in each department, will develop and implement a documented procedure for the timely tagging of assets.

- **Gift Handling and Monitoring** – When gifts are received by CECS faculty and student groups, they are routed through CECS Development for processing. Checks are copied and retained for reconciliation purposes. Gifts are then delivered to the UM-Dearborn Office of Institutional Advancement to be endorsed. Checks and donor information are copied prior to sending the check to Development Services in the Office of University Development in Ann Arbor for deposit to the Mellon lockbox. Because the process involves several units, delays in depositing donor gifts can occur.

Faculty is responsible for complying with donor reporting requirements. There is no formal process or tracking mechanism in CECS Development to monitor fund usage with donor intent and restrictions. When faculty and staff give gifts, there is no process to verify the gift is not directed into funds they control, which could result in a conflict of interest.

Management Plan – We establish written procedures to assure gifts are managed responsibly and that faculty members are aware of these procedures.

- Engineering Professional Development – The Engineering Professional Development (EPD) Office handles a variety of programs, most significantly onsite courses and seminars for external clients, the Distance Learning Network (DLN), and graduate certificate programs. To maintain the academic integrity of online courses, CECS requires distance learning students to follow established guidelines for examinations administered by proctors.
 - *Formal Agreement* – The EPD office does not have a formal process for generating a contract with external clients. One major client has had a relationship with the office for 20 years, without the support of a formal, written agreement. Formal agreements, signed by the appropriate personnel are important to ensure any risks associated with EPD program offerings are covered.
 - *Payment Handling* – When checks are received as payment, a copy is retained for reconciliation purposes. While credit card refunds and receipt of cash are rare, procedures for processing them are not included in EPD cash handling documentation. Additionally, not all communications sent to clients contain EPD contact information, which can create check deposit delays.
 - *EPD Documentation* – Students enrolled in a DLN course that live outside a 30-mile radius of the UM-Dearborn campus have the option of using a proctor to administer their exams. EPD maintains an Access database of proctor contact information because there is no table in Banner, the student record system, to support the data. Overall, the office has comprehensive documentation for their offerings. However, documentation is lacking for how to update the Access database and run reports to monitor for compliance with guidelines. Additionally, some information contained in the Access reports was incomplete (e.g., missing proctor address, work exception identification). There are also no procedures for setting up course registrations online for non-credit students.

Management Plan – The Director of EPD is taking steps to meet the requirements of the recommendation. The new business manager will support the director in these activities.

- Incident Response Plan – CECS does not have an Incident Response Plan. University Standard Practice Guide (SPG) Section 601.25, *Information Security Incident Reporting Policy*, directs units to “...develop and implement unit-level policies, procedures, communications, and education programs that are consistent with University wide policies and procedures.”

An Incident Response Plan assists IT personnel when responding to a security incident. The plan should identify the proper notifications and escalations when sensitive data is involved in an incident.

Management Plan – Engineering Computer Services (ECS) will work with the Unit Liaison, follow SPG, establish a procedure, and have all personnel trained.

- Key Logs – Personnel who are no longer with CECS are still listed as having a physical key to access the server rooms. Proper physical access control is essential in maintaining the confidentiality, availability, and the integrity of University IT assets. Master keys, along with

all sub-masters and individual keys, should be appropriately tracked and surrendered when individuals do not require access to the server rooms.

Management Plan – The server rooms will be re-keyed. New keys will be issued to ECS personnel who are responsible for maintaining the servers. No key shall be issued without Associate Director’s signature. Upon termination, the keys will be returned to the Associate Director.

- **Vulnerability Scans** – During the audit, vulnerability scans were conducted on various networks throughout CECS. The scans locate weaknesses caused by computers or servers that are not securely configured and are susceptible to unauthorized access and malicious code. Web Application Vulnerability scans were also conducted on CECS websites, including the Virtual Learning Tool. These scans locate vulnerabilities with websites programming code that could allow individuals to gain unauthorized access to University data. Vulnerabilities were identified on CECS networks and websites.

Management Plan – The scan report is being studied, to determine the criticality of network and server vulnerabilities, and a plan is devised to fix them. False positives are being documented. A web programmer position has been posted, who when hired will evaluate the web application vulnerabilities and make a plan to resolve them. An email will be sent out to Information Technology Services to request regular scans and the scan reports.

- **Configuration Control Policy** – ECS does not have a documented configuration management program. Configuration control and change management policies are essential to ensure effective implementation of security controls across all computers in CECS. Proper configuration controls should identify baseline configurations including the following:
 - Minimum security for all computers connected to CECS networks
 - Appropriate patch management and update schedules
 - Actions to be taken in the event computers cannot meet the requirements

Change management procedures are needed to ensure changes made to the configuration of the computers do not negatively affect the availability or security of the computer assets.

Management Plan – ECS will draft a configuration control policy, covering security requirements, patch management, and update schedule and replacement procedure. Procedures will be documented. The policy will be submitted to the CECS Associate Dean, who agreed to bring it to the appropriate college committee to be discussed and approved.

- **Disaster Recovery Plans for IT** – Disaster Recovery Plans (DRP) have not been developed for IT services or systems for CECS. In accordance with SPG Section 601.12, *Institutional Data Resource Management Policy*, and following best practice guides a DRP should be developed for essential operations to include data backup, disaster recovery, and emergency mode operation procedures. Failure to create a DRP can cause unnecessary delays in the recovery of the department’s critical IT assets.

Management Plan – ECS will document the dependency of the components involved in supporting all its services provided, the critical operations will then be identified. ECS will document the sequence it must take and how to restore the services in the event of disasters.

- Data Security Procedures – ECS lacks procedures identifying proper locations for faculty and staff to store sensitive data. In order for sensitive data to be properly handled, the data must be identified and stored in locations that ensure the protection of the data. Classification of the data helps ensure the correct level of security is in place and enables IT security personnel to respond correctly after a security incident.

Management Plan – ECS does not house any personnel, health, financial, medical or any similar data. Nor does ECS provide services to clients to access such data stored somewhere else. However, ECS will educate students, staff, and faculty that it is their responsibility to identify sensitive data, and not to store them in ECS storages.

Summary Response from the Dean

The College of Engineering and Computer Science (CECS) is grateful for the careful audit of the adequacy of our internal controls over Financial Processes, Educational Programs, Operational Processes, Compliance Requirements, and Information Technology Processes, and for the recommendations for corrective action contained in the audit report. The high-level outline of our proposed remedies will lead to major revisions in our process controls and to an aggressive and continuing training program to ensure that faculty and staff members are always aware of relevant current procedures. My experience has been that effective and understood process controls, far from imposing a burden on a college, will enhance the quality and effectiveness of its educational and research enterprise. For this reason, I welcome the opportunity for process improvement and look forward to soon being able to invite you to review these improvements.

The control environment of the College of Engineering and Computer Science needs improvement. CECS faculty and staff operate in a highly decentralized environment and the majority of established procedures have been in place for years without an assessment by CECS management of their efficiency or effectiveness. Investing the time and effort to standardize CECS processes will aid in consistent and continuous operations.

Increasing unit guidance and central monitoring of unit performance is necessary to strengthen financial oversight. Assessing the reporting tools used for unit-level monitoring will encourage effective and timely review. Several operational procedures should be incorporated in unit level guidance and central monitoring to ensure compliance with regulatory requirements.

The Engineering Computer Services Administrator has maintained their servers, desktop, and lab computers in a secure manner; however, documentation is lacking in several key areas and opportunities exist to strengthen controls by implementing mitigation strategies. Additionally, CECS and ECS Administrators should seek opportunities to identify redundant information technology services provided by both CECS and UM-Dearborn Information Technology Services to determine the necessity of offering these services.

University Audits will assess management's progress towards achieving goals for improvement during the third quarter of fiscal year 2013.

International Institute
Report issued June 29, 2012

#2012-101

Established within the College of Literature, Science, and the Arts (LSA), the International Institute's (II) mission is to stimulate research and teaching on critical areas of the world and on international issues that cut across world regions and disciplines. The II includes seventeen centers, programs, and initiatives, each with its own mission of promoting studies and teaching focusing on a specific region.

The II, which is essentially a center of centers, was founded in 1993 to support the centers and programs. The majority of centers were in existence prior to the II's inception. Each center has a faculty director with expertise in the area of study associated with the center.

On an annual basis, the II distributes almost \$4 million to U-M students and faculty, which includes roughly 300 grants for international research. The II offers many different student programs that range from concentrations and minors for undergraduate students to master's degree, certificate, and dual-degree programs for graduate students. The centers sponsor many events throughout the year including lectures, exhibits, and cultural performances. They communicate and collaborate with colleges, schools, departments, and faculty from all over the University to develop programs or promote studies and events.

With the help of II administration, U-M students have received the most Fulbright grants nationwide for five of the last seven years. The Fulbright program supports international research and is one of the most prestigious award programs in the world. Six centers have received the U.S. Department of Education's designation of National Resource Center (NRC), formally established in Title VI of the Higher Education Act of 1965. This designation provides the center with competitive grants that support the study of foreign countries and languages through undergraduate and graduate programs.

As of January 2011, the II reports administratively to LSA. Previously, the II reported to LSA and the Provost's Office. The II recently restructured to simplify reporting lines, resulting in the clustering of centers. This change allows staff to enhance skills in their administrative area and become more efficient while continuing to provide center specific support.

The objective of this audit was to evaluate the II's operational and administrative activities. University Audits reviewed policies, procedures, and internal controls to test compliance with University guidelines and other regulations. Centrally managed processes were evaluated to determine if they provide adequate oversight and guidance. Our risk analysis identified the following areas for further review:

- Organizational structure
- Grant management
- Gift and donor funds
- Shared services
- Financial aid
- Academic and international programs
- Fiscal responsibilities
- Conflicts of interest/commitment
- Cash handling
- Payroll

Based on our review, opportunities for improving internal controls are noted below.

Risk and Control Discussion

Although centers share common objectives, they vary, sometimes greatly, in their approach toward accomplishment of their missions. Each center is unique in how it promotes study and how it manages its relationships with donors and other units. The level of autonomy is unique for each center as they differ greatly in terms of funding, staffing, and structure. Centers and programs operate individually and have created their own procedures over time that take into account specializations of staff, cultural perspectives, and source as well as amount of funding. The center directors and administrators are responsible for managing the centers' day-to-day operations. The level of autonomy and the pressure on center administration to fulfill the centers' visions within the constructs of LSA and II policies

complicates efforts to provide a foundation in which standardized policies and procedures can rest. This augments the workload and tension on II and center staff.

Due to the level of decentralization, II oversight responsibilities are important to ensure effective communication and management of center finances. The decentralized nature of the II makes it difficult to enforce policy and streamline procedures. With the University's increasing focus on efficiency and the decrease in the Department of Education funding to higher education international programs, the need to optimize business processes is essential to the continued success of the II and its centers.

The II is in the process of shifting towards a Shared Services model. LSA has provided the following in response to the audit findings and recommendations: Shared Services in LSA provide a mechanism to improve financial practices and minimize redundancies throughout the II centers and central business office. Shared Services staff utilizes financial best practices for reconciliation, encumbering commitments, and reporting. Shifting work from the II centers to a Shared Services model will allow center staff to focus on their core activities. Strengthening the connection between the II central business office and LSA Shared Service operations will provide opportunities for improved leadership, better training, and revised business processes and workflow that are in line with expected best practices. The utilization of a Shared Services model offers opportunities to improve internal controls and efficiencies within business processes. Changes to the current II structure related to financial work should be in place within the next six months.

- Oversight and Monitoring – The II business office maintains an extensive shadow system of Excel spreadsheets and updates them regularly. In many cases, the centers also maintain their own spreadsheets that house the same data. These shadow systems replicate functions M-Pathways can perform. The use of Real-Time Financials (RTF) would remove the need for this redundant practice and allow centers to access vital financial information electronically without maintaining their own spreadsheets.

The current reconciliation process for Statements of Activity (SOA) at the II is inefficient and cumbersome. M-Pathways eReconciliation would allow the business office to complete reconciliations of SOAs online. Considering the large number of accounts that are reconciled monthly for departments and project/grants, the use of eReconciliation would offer opportunities to reduce paperwork and duplication of efforts.

There are many financial oversight/monitoring tools available from the University's centrally-supported systems (M-Reports, Business Objects) and LSA's customized Business Objects reports (referred to as "Comprehensives"). With these reports, management will be able to view, not only financials for the II and each center, but also transactional level data if necessary. The use of management reports will greatly improve the II's ability to monitor outliers and trends, identify inefficiencies in business processes, improve controls, and make more informed, strategic decisions.

Management Plan – The II is dedicated toward improving oversight of its financial operations. The central II and center administration will utilize Real Time Financials to minimize reliance on in-house shadow systems. As Shared Services is implemented, shadow systems and redundancies will be identified and eliminated. As opportunities to improve internal controls and efficiency of procedures are identified, they will be addressed. The II has already begun utilizing some centrally-supported systems, as well as eReconciliation, for account review and reporting with positive results.

- International Travel

- Review and Oversight of Expenses for Incoming Travelers – The Fulbright Hays Doctoral Dissertation Research Abroad (DDRA) Fellowship is the only fellowship or program in the II that requires travelers to provide supporting documentation for expenses. One employee maintains and reviews expense documentation for the DDRA Fellowship. These expenses are not reviewed or approved by a higher administrative authority. If the person who maintains this documentation were unavailable, the risk to the continuity of this process would be substantial.

The II does not require expense documentation for other travelers that receive funding for international travel for research or other purposes. No process exists for reviewing or confirming expenses for returning travelers. Accounts are reconciled but there is no detailed review of expenses.

Management Plan – A process for the review and oversight of DDRA Fellowship financial activity by the business office manager has been implemented. The II will develop a process for backend reporting of travel expenses from its awardees whose sponsors do not require detailed expense reporting or submission of receipts. One of the following three approaches will be implemented 1) require travelers to submit a travel expense report following a standard template (not requiring detailed receipts), 2) give each awardee an exit interview upon return from their travels, or 3) provide the opportunity to share travel experiences with other potential applicants through workshops, possibly creating grantee panels. When the process is in place and formalized, it will be consistently applied to all travelers.

The new SPG Section 601.30, *Payments/Reimbursements to Students for Non-Employment Purposes* addresses changes to reporting requirements for students with regard to financial aid. The II will communicate with the Office of Financial Aid to gain an understanding of their expectations of expenditure reporting and change procedures accordingly to ensure compliance with federal law and university policy. The implementation of options identified above will begin with fiscal year 2013 awardees.

- University Travel Registry – The II has no formal process to ensure international travelers have registered with the University’s Travel Registry. Some centers require confirmation of registration with the University’s Travel Registry while others do not. The Travel Registry provides a link to enroll in travel-abroad health insurance, a secure location to record itinerary and contact information, and the ability to share information online with the traveler’s department, family, and any other necessary individuals.

Management Plan – The II will mandate all faculty and staff travelers to utilize the Travel Registry when travelling. To monitor registration, the II will require travelers to utilize the travel registry function that notifies an administrative contact when the registration is complete. Faculty and staff will use their Unit Manager, Key Administrator, or the Assistant Director as the administrative contact in the travel registry. Student travelers will use the Student Fellowships Manager as their administrative contact. Central II management will make additional efforts to ensure implementation at the center level.

- Concur

- Concur Expense Reports – The II’s transition to Concur has been challenging due to the number and nature of expenses within the II. The II manages a large number of hosting

events and international travel that makes approving expense reports a lengthy process. Center/cluster administrators initially approve expense reports followed by two levels of approval within the II business office. Review University guidelines for expense reporting to identify, develop, and document Concur practices that best suit the needs of the II and its centers

Management Plan – The II will review Concur practices within centers and identify opportunities to improve efficiency. The II and centers will develop standards for a minimum and maximum number of transactions per report. Establishing minimum transactions will positively impact the workload of center administration. The implementation of Shared Services will provide another opportunity to review these procedures.

The II will shift the review of Concur expense reports to unit managers and key administrators. They will review reports for appropriateness and reasonableness as well as compliance with University policy. We have made resources available to Unit Managers and Key Administrators to enable them to ensure compliance with U-M and LSA policy and procedures.

- Concur Training – Expense submitters and approvers have not completed the current Concur/P-Card training. The Concur Approver eLearning Course located in MyLINC is required annual training for all faculty and staff who approve expense reports.

Management Plan – The annual Concur training was discussed with the unit managers and Key Administrators at the II Unit Manager meeting in January 2012. The II will ensure all Concur approvers have completed the required annual training by running oversight reports in Business Objects, specifically *FN06 Procurement Travel and Expense Approver Report by EmpID, DeptID, or DeptGrp*. The II will establish an expectation that training be completed each May or June in preparation for a new fiscal year. Additionally, the II will seek and identify relevant training resources for staff submitting and approving expenses in Concur to improve efficiency.

- Unit Subcertification of Financial Results and Internal Controls – The II completed the fiscal year 2011 Certification of Financial Results and Internal Controls. Considering the decentralized nature of the II, the certification of controls at the II level may not be representative of the centers within. The Annual Internal Controls Certification Process provides units the ability to subcertify by enabling them to respond to the certification questionnaire for each department ID within the unit. Completion of the gap analysis allows units to identify and address control gaps or inefficiencies within business processes. Review of gap analyses will assist the II in identifying opportunities to make business processes uniform throughout different centers.

Management Plan – The II will require all center directors and administrators to certify to their internal controls for fiscal year 2013. The II has begun presentations to the unit managers and key administrators on the various components and sections of the annual certification process. The purpose of the presentation is to train and inform the unit managers and key administrators of the process so that they can effectively participate in the upcoming annual certification process. This will ensure the II reports the most accurate information regarding its processes and identifies any control gaps in its processes for improvement or corrective action.

- **Copies of Checks** – The business office processes all gifts received by centers and programs. Although the business office has a strong system for logging checks, they maintain copies, which create an unnecessary risk of inappropriate access to individual bank account information. After receiving confirmation of the processed gifts, the business office ensures they are properly recorded.

Management Plan – The II will restrictively endorse and log checks upon receipt and discontinue the practice of copying checks.

The II has the unique challenge of providing oversight of multiple decentralized centers and programs. Internal controls have been established within many areas of operation. Increasing central monitoring of unit performance will improve the II's overall control environment and provide insight to standardizing policies and procedures. Management's utilization of University oversight and monitoring tools will strengthen financial oversight. The efficiency gained will allow II leadership to spend more time on strategic planning and analysis.

University Audits will evaluate the status of planned process improvements in the second quarter of fiscal year 2013.

Information Technology

Information and Technology Services DNS - Domain Name Service
Report issued May 2, 2012

#2012-301

The Internet is a network of networks based on IP¹ addresses for machine to machine communication. DNS, short for Domain Name Service, is an Internet service that translates human friendly domain names into machine friendly IP addresses in order to facilitate the communication between human and machine. When a domain name is used, such as typing a web site address into a web browser, a DNS service must translate the name into the corresponding IP address. For example, the domain name www.umich.edu translates to several IP addresses one of them being 141.211.13.224.

The DNS system is its own network. If one DNS server does not know how to translate a particular domain name, it asks another one, and so on, until the authoritative source returns the correct IP address (known as a recursive query. See Figure 1).

The University of Michigan relies on DNS for the majority of services related to the campus computing environment. Information and Technology Services (ITS) manages the core DNS systems for the University. The Hostmaster group at U-M, which is part of Networking and Telecommunications

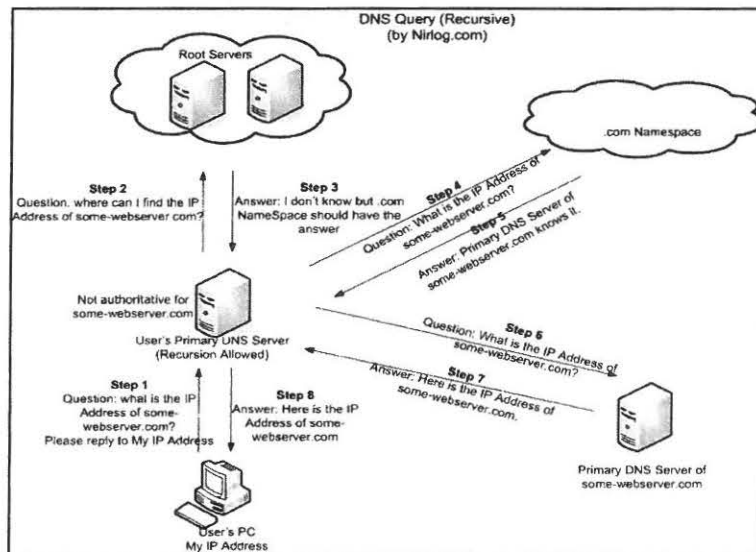


Figure 1. Recursive DNS Query

¹ Internet protocol, the method by which information is sent between any two computers on the Internet.

(ITSCom), is responsible for the umich.edu zone² and several others. The Hostmaster group is also responsible for the following services:

- DNS resolver services for servers and end-user computers
- Data source for 509 ITS managed DNS zones
- Slave³ DNS for 1,896 zones including zones for other universities
- Domain name delegation

Risks

DNS is part of the critical infrastructure at the University of Michigan, without it, the business of the University, instruction, and research would be significantly affected or would completely halt. The severity of risks associated with DNS varies depending on the configuration of the DNS implementation and vulnerabilities that exist in the DNS software. Critical risks involved in any DNS implementation include, but are not limited to:

- DNS Amplification attacks (See Figure 2) enable attackers to leverage University resources against an unsuspecting victim by launching a Distributed Denial of Service attack (DDoS)
- DNS Cache Poisoning or Spoofing is where an attacker can modify the DNS database changing the IP address to domain name mapping from a legitimate IP address to an IP address of a web server hosting malware or used in the process of identity theft

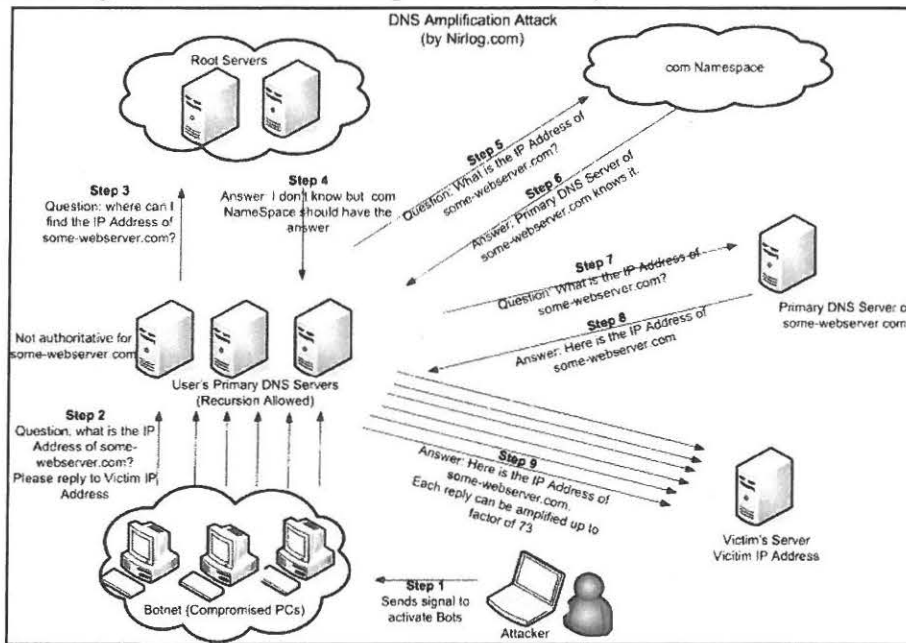


Figure 2. DNS Amplification Attack

These items represent potential risks, not current or ongoing problems. However, these risks must be considered when changes are made to the University's DNS implementation and structure.

There are several other risks associated with DNS that could lead to medium to severe compromise of the University of Michigan computing infrastructure. These risks include:

² A DNS zone is a portion of a domain name space using the Domain Name System (DNS) for which administrative responsibility has been delegated.

³ A Slave DNS server or zone is also known as a secondary or backup DNS server or zone to a Master DNS server.

- Information disclosure, including the existence of sensitive or critical systems, is possible when machines containing sensitive or critical data are listed in DNS zones accessible on the public Internet
- Performance degradation would lead to a reduction in efficiency

The University of Michigan is dependent on the accuracy of the data contained in the DNS infrastructure. The security of the computing environment is a shared responsibility with every faculty, staff member, and student who access the University network. The hardening⁴ of DNS security is particularly important to prevent malicious attackers from impersonating University and non-University services that could threaten the integrity and security of student, faculty, and staff sensitive information.

The objective of this audit was to assess the University of Michigan core DNS in the areas of design, operation, security, performance, and change control processes in order to determine whether management has successfully mitigated the identified risks. Specific audit objectives include:

- Ensuring that the design of the DNS system includes effective controls
- Assessing operational processes that facilitate stability of the DNS system
- Examining logical and physical security of the DNS and management system(s)
- Evaluating if DNS performance and management systems are suitable for efficient operation
- Reviewing change control processes

The audit assessed existing practices to determine if necessary controls are in place and reviewed the effectiveness of existing controls to ensure core DNS systems are secure and stable. UMHS, UM-Flint, UM-Dearborn, other campus DNS providers and end user DNS configuration settings were excluded from this assessment.

Risk and Control Discussion

- Recursion on Authoritative Name Servers – Each domain has at least one authoritative DNS server that publishes information about that domain and the name servers of any subordinate domains. These authoritative name servers are assigned responsibility for their particular domains, and can assign other authoritative name servers to sub-domains. Authoritative name servers at U-M have been identified as allowing recursive queries. Recursion⁵ should always be disabled on authoritative name servers.

According to the Department of Defense Security Technical Implementation Guide (STIG)⁶, the following vulnerability exists when an authoritative name server is configured to allow recursion:

"A potential vulnerability of DNS is that an attacker can poison a name server's cache by sending queries that will cause the server to obtain host-to-IP address mappings from bogus name servers that respond with incorrect information. Once a name server has been poisoned, legitimate clients may be directed to non-existent hosts (which

⁴ The process of securing a server by minimizing its vulnerabilities.

⁵ Recursion refers to the action of a DNS server querying additional DNS servers

⁶ A Security Technical Implementation Guide or STIG is a methodology for standardized secure installation and maintenance of computer software and hardware. The term was coined by the Defense Information Systems Agency who creates configuration documents in support of the United States Department of Defense (DoD). The implementation guidelines include recommended administrative processes and span over the lifecycle of the device.

constitutes a denial of service) or, worse, hosts that masquerade as legitimate ones to obtain sensitive data or passwords.” (Defense Information Systems Agency 2008)⁷

Authoritative name servers should disable recursive queries in order to guard against DNS cache poisoning. In a cache poisoning attack, the attacker attempts to insert a false address record for an Internet domain into the DNS. If the server accepts the false record, the cache is poisoned and subsequent requests for the address of the domain are answered with the address of the unauthorized server controlled by the attacker. Authoritative name servers should also be separated functionally from name servers that resolve queries on behalf of internal clients. ITS may achieve this separation by dedicating machines to each function or, if possible, by running two instances of the name server software on the same machine; one for the authoritative function and the other for the resolving function that is responsible for translation of a domain name into an IP address.

Management Plan – ITS agrees with the recommendation and will implement it no later than the end of fiscal year 13.

- **Recursion – External Clients** – The Hostmaster DNS Campus Resolver servers that are exposed to the Internet are at risk for several types of attacks such as denial of service, cache poisoning, performance degradation, and amplification attacks⁸. Any host that can query a resolving name server has the potential to poison the servers name cache or take advantage of other vulnerabilities that may be accessed through the query service. In July 2010, University of Michigan Hostmaster DNS servers were attacked with an amplification-style attack that created some service degradation. While the incident was detected and mitigated without any loss of service, steps should be taken to mitigate the potential of future issues.

University Audits recommends that, at a minimum, the Hostmaster group formalize a process to detect and mitigate attempts at cache poisoning. The preferred recommendation is for the Hostmaster group to limit recursive queries to internal hosts in order to mitigate vulnerabilities. Failure to exclude recursive queries from external hosts could weaken the DNS infrastructure by exposing critical DNS systems to potential denial of service attacks or threaten data integrity by allowing the name server cache to be poisoned. The Department of Defense Strategic Technical Implementation Guide recommends limiting recursive queries to internal hosts.

Management Plan – ITS believes it is important to provide service to the University of Michigan extended community. While there is no good means to detect cache poisoning, ITS agrees to continually monitor and evaluate DNS security in this field. ITS also agrees to establish a process to detect DNS amplification attacks and denial of service attacks. At this time, ITS accepts the limited risks associated with accepting queries from external hosts.

Auditor’s Comment: Continuous monitoring of DNS for cache poisoning, DNS Amplification, and Denial of Service attacks will mitigate the risks commonly associated with recursion. The corrective action stated by management meets the expectations of this finding.

⁷ Defense Information Systems Agency. Domain Name System Security Checklist V4R1.5. December 15, 2008.

⁸ Amplification Attack: A method for attacking computers and computer networks in which the attacker exploits some aspect of the network’s design to cause it to flood itself and others with responses to the attack.

- Zone Transfer⁹ Authorization – A DNS zone provides a list of IP addresses to host names that can be descriptive of the service the host performs. A zone transfer enables a remote attacker to instantly populate a list of potential targets. In addition, a zone can contain service specific host names and often contain a naming convention that can provide hints as to a host's primary application (for instance, proxy.example.com, payroll.example.com, b2b.example.com). This can be valuable information for attackers when they are looking for systems to target as the list may contain service specific names that may quickly narrow the attacker's focus. A zone transfer may also require more system resources than a normal query. An excessive number of simultaneous zone transfer requests may overload the DNS servers creating a denial of service scenario. U-M DNS Servers are not configured to limit zone transfers to a list of approved name servers authoritative for specific zones. A common best practice is to restrict zone transfers to specific name servers.

Management Plan – ITS agrees with the recommendations and will implement them by end of calendar year 2012.

- Authenticated Zone Transfers – Zone Transfers between U-M DNS master and slave DNS servers are not cryptographically¹⁰ authenticated (encrypted). A slave DNS server is essentially a secondary server in a zone. Like a zone master, a slave will respond to DNS queries for those zones for which it is defined. A DNS slave updates its zone information by requesting a zone transfer from its master. In this scenario, the risk for the slave is that the response to its request is not actually from its authorized master but from an adversary posing as the master. In this situation, such an adversary would be able to modify and insert records into the slave's zone at will, overriding IP address to domain name mappings, which could result in identity theft. This can happen if an attacker changes the IP address to domain name mapping in the DNS database to a server that mirrors a legitimate service, deceiving an unsuspecting user into providing sensitive data that could lead to identity theft or data loss. To protect against this occurrence, the slave must be able to authenticate the master in order to provide assurance that any zone updates are valid.

University Audits recommends that the Hostmaster group cryptographically authenticate zone transfers in order to mitigate the risks associated with a rogue server impersonating a master DNS server. Data for the Hostmaster core DNS primary and secondary zones are distributed by a cryptographically secure means, some zones between the Hostmaster core DNS servers and campus unit DNS servers or between the Hostmaster core DNS servers and external entities are not. A review of these zones should be conducted. Security and encryption should be increased where feasible and appropriate.

Management Plan – ITS commits to working with our partners to authenticate slave zone transfers whenever possible and apply encryption as appropriate.

- DNS Architecture Documentation – The Hostmaster DNS architecture is not thoroughly documented. Without current and accurate documentation, any changes to the network infrastructure may jeopardize the network's integrity. To assist in the management, auditing, and security of the network, facility drawings and topology maps are a necessity; and those

⁹ Zone Transfer is a type of DNS transaction in which the databases containing DNS data are replicated across a set of DNS servers.

¹⁰ The process of protecting information by transforming it (encrypting it) into an unreadable format called cipher text. Only those who possess a secret key can decipher (or decrypt) the message into plain text.

addressing critical network assets, such as the DNS servers, are especially important. Topology maps are important because they show the overall layout of the network infrastructure and where devices are physically located. They also show the relationship and inter-connectivity between devices and where possible intrusive attacks could take place.

The Hostmaster group should create documentation that accurately defines the DNS infrastructure in order to assist with the management, security, and control of DNS. The documentation, at minimum, should include the server role, location, function, security controls, topology maps, and a list of networks that can query each DNS server.

Management Plan – ITS agrees with the recommendations and will prepare and maintain documentation by end of calendar year 2012.

- **Host Operating System** – Recently, the decision was made to migrate ITS Linux servers, including the DNS servers, from the U-M Computing Environment (UMCE) Linux operating system to a new operating system and discontinue support for UMCE Linux. The current operating system is customized for security and efficiency while minimizing the resources required for production servers. A migration plan to move to the new operating system does not exist. Due to staffing constraints and the needs of the NextGen project, the priority of migrating systems is considered low. A migration plan would ensure that the DNS servers are migrated to the new operating system in a timely and orderly manner. This will eliminate the need to support dissimilar systems; leading to instability and security issues. At this time, the System Support team is actively maintaining the UMCE Linux operating system on the core DNS servers by applying operating system and security updates as needed.

According to the System Support team's process, security patches, and system and program updates are first deployed to test servers. Once the patches and updates have been tested, they are then applied to the production servers. This patching process is a conservative methodology to applying patches in order to mitigate system impact. Only high risk security patches are applied.

University Audits recommends that ITS develop a plan to migrate DNS servers from the UMCE Linux operating system to the new operating system.

Management Plan – ITS will move the one host with a high security risk to a new platform (with a new operating system) by end of fiscal year 2012. In addition, the remaining hosts will be moved to the new operating system as part of a larger migration away from the current operating system by the end of fiscal year 2013.

- **Performance Metrics** – A performance metric is a measure of system activities that can be used to evaluate a system's stability and efficiency. The Hostmaster group currently does not collect performance metrics. When performance metrics are monitored proactively, early indicators of system issues can be identified and mitigated before an issue becomes a problem. When metrics are used reactively, a problem has already occurred and metrics provide only historical information.

University Audits recommends that the Hostmaster group proactively monitor performance metrics and alerts. A baseline analysis should be completed and then a determination of thresholds can be set for early warning issue detection in order to mitigate any issues before they become problems. Example performance metrics include DNS query delays, rate of message delivery, and network bandwidth. The Hostmaster group should implement a system to

automate the monitoring of performance metrics and alert the appropriate individuals when predetermined thresholds of the core DNS systems are exceeded. Proactive monitoring can also be used to identify system resource needs.

Management Plan – ITS currently monitors DNS server hardware and operating systems for faults and performance. The network connecting the DNS infrastructure is also monitored for faults and performance. ITS will perform a baseline analysis, develop appropriate performance thresholds, and implement appropriate monitoring of the DNS service. ITS agrees with the recommendation and will implement by end of fiscal year 2013.

- Server Access – Because a process for removing user accounts does not exist, some terminated employees have accounts on DNS servers. To maintain effective security, accounts that belong to terminated employees should be removed. During the review of accounts, several were discovered that belonged to terminated employees, some of these employees were terminated over 12 months earlier. In two cases, accounts had been accessed by employees post termination. These user accounts did not have access to DNS configuration data.

Management Plan – ITS agrees with the recommendations and will review accounts quarterly and discontinue access as appropriate. In addition, ITS will separate the DNS staging function and move it to a new host (with a new operating system).

The Hostmaster group has demonstrated a strong commitment to stability, security, and accessibility of DNS services to the University of Michigan community by taking mitigating steps that reduce the risk of downtime and provide a stable service on which the University can rely for doing business, research, and instruction. Hostmaster processes and procedures ensure stability by testing patches in a preproduction environment before applying them to production servers, patching systems only when critical vulnerabilities are discovered, and using automation to distribute configuration changes to multiple systems. Accessibility is achieved by building redundancy into this service. Each DNS role has at least two servers to provide the services need for a specific role. DNS servers are distributed geographically to provide assurance against several risk types. Security is achieved by taking a minimalist approach. DNS servers are dedicated to the DNS function. By minimizing access, security risks are mitigated.

University Audits will conduct an initial follow-up of management's progress on action plans in the second quarter of fiscal year 2013.

Information and Technology Services Mobile Applications
Original report issued June 29, 2012

#2012-308

Mobile computing is revolutionizing the way people use technology. In its most general sense, mobile computing refers to the use of any computer device that is not connected by physical wires to a server or host computer. The portable devices used for mobile computing allow users to access a shared infrastructure independent of their physical location.

Since the launch of Apple's iPhone, there is a rapidly growing demand for mobile software applications for various purposes covering a wide range of individual and organizational needs. Introduction of the iPad and Android-based phones and tablets has amplified the interest in mobile applications. The overall market for mobile application is big and growing fast. It reached \$9 billion by the end of 2011. Mobile software application downloads are expected to reach nearly 48 billion in downloads 2015. As use of mobile technology increases so does complexity of security, networking, and developing for such

devices. Mobile applications (commonly referred to as mobile apps) may deal with personally identifiable information (PII), credit cards, and other sensitive data.

The U-M Mobile Center is a new site where the campus community can access resources to build apps and collaborate. This site makes it simple for everyone in the University community to design solutions that enhance the way faculty, staff, and students connect and share information. The U-M Mobile Center has development tools for U-M related apps available for download. The Mobile Center features a developer toolkit containing guidelines on:

- Licensing and distribution
- Design and usability
- University logo and identity usage
- Accessibility



At the University, faculty, staff, and students are all encouraged to create apps. Faced with limited budget and staff, U-M's mobile strategy is to create a widespread community of mobile developers by leveraging the power of crowdsourcing – a way of generating new technologies or creative solutions through an open call to the community. U-M acquires mobile applications (both Apple (iOS) and Android apps) along with mobile websites through this methodology. Since this approach has been in use, U-M has created a catalog of free apps. Where appropriate, ITS works with the Office of Technology Transfer to purchase applications developed by the community. Certain useful student-developed apps were purchased and their code upgraded to make them supportable by ITS. The



Office of Technology Transfer has a standard license that ITS uses when they submit an app to the Apple App Store.

During the initial mobile pilot, the Information and Technology Services (ITS) Mobile Applications Team at U-M included more than 30 people comprising six full-time equivalents. Today the team is consists of three full time equivalents furnished by ten individuals. Along with encouraging community development, ITS develops some mobile applications in-house. ITS develops applications for iOS (iPhone/iPad), and Android devices. ITS also adapts any applications acquired from students, faculty, and staff to make the code supportable. Any applications developed by the U-M community can be placed on the Mobile App Center web page. ITS created development processes to:

- Build and distribute apps to the University community
- Complete builds for other units
- Encourage expansion of the U-M developer community

Significant support and networking opportunities are offered to the U-M development community. ITS supports development by providing tools and sponsoring contests to encourage development of applications. For instance, the Mobile Apps Team provides the Apple Software Development Kit (SDK) through an enterprise license so that employees do not have to purchase it themselves. The team registers the users through their developer portal. A campus group of developers has been assembled to define standards, guidelines, and best practices for web services. In addition, training on how to develop code that is secure is provided to developers.

Michigan, the first official U-M mobile app was developed by students, started as a class project in 2009. Purchasing student-built apps requires considerable staff time and resources to ensure the apps are scalable and comply with University security and policies. This can entail fairly significant rewrites of the purchased apps. The U-M mobile team worked on the *Michigan* app full time for three months

before releasing it for public use. This App was subsequently released through the iTunes store in June 2010.

In March 2011, the Mobile Apps Team unveiled its *Student Academics* app, which provides a schedule of classes and other useful tools for managing academic life at U-M. The U-M Mobile Team has recently released an Android-based application and the University developer community has developed additional Android-based apps.

The objective of the audit was to assess effectiveness of the development process for mobile apps as well as the security of mobile applications developed and administered by ITS for the University of Michigan. Failure to manage risk effectively within mobile applications can result in exploitable weaknesses in supported apps, which could compromise personally identifiable data and unauthorized access to network resources.

This audit examined the effectiveness of controls over the iOS mobile applications that are currently being developed and distributed by ITS. Test versions, which includes Android-based apps, were not available and out of scope.

Risk and Control Discussion

- **Accessibility** – In recent years, accessibility to technology has been an issue on college campuses with the National Federation of the Blind bringing action against several universities over the civil rights of vision-impaired individuals under the Americans with Disabilities Act. ITS provides guidance for mobile web developers to ensure that the web pages developed by the U-M community are accessible to individuals with disabilities. U-M Mobile App Center guidance directs developers to three free third-party testing products used to test accessibility. University Audits tested the *Michigan* App and the mobile web page created for the U-M Travel Registry using recommended products.
 - In general, the U-M Travel Registry web page met accessibility guidelines as tested by the three third-party products; however, there were some minor exceptions related to certain headings that were left blank.
 - Testing of the *Michigan* App on an iPhone4 using VoiceOver¹¹ revealed that the *Info* button on the main page and the icons for *Featured*, *Vegan*, *M-Healthy*, *Vegetarian*, *Halal* and *Gluten-Free* selections do not have readable text equivalents in VoiceOver. There are labels on the keys for these symbols, but not in each specific menu listing. These items are informational graphics and should have readable text alternatives to ensure accessibility.

The minor discrepancies noted should be corrected and the *Michigan* app and the Travel Registry web page should be retested. More significantly, we recommend that all U-M mobile web applications that are moved to the App Store and publicized on the Mobile Center Web App page be tested for accessibility using appropriate tools and any highlighted deficiencies corrected. Where appropriate, ITS should review evidence of such testing prior to moving the apps to the Mobile Center page or the Apple App Store.

¹¹ VoiceOver is a piece of software created by Apple to make it easier for the blind and those with low-vision to use a computer.

U-M does specific testing related to accessibility, especially on ITS developed applications. ITS does a thorough job of testing the apps that they develop but those developed outside of ITS do not always get the same level of testing. There is significant risk involved in creating inaccessible applications. User testing, review of forms, and verification of keyboard navigation are areas that should be tested and reviewed on all web apps created by the U-M community prior to placing them in the App Store to ensure that the University is not exposed to unnecessary levels of risk because advocacy groups for disabled citizens are actively monitoring accessibility of technology.

Management Plan – Mobile applications developed by Information and Technology Services will continue to be put through a full accessibility test to ensure that we are meeting the guidelines to the best of our abilities. ITS will continue to advise and promote accessibility testing of mobile applications developed by others across campus via the U-M Mobile Apps Center, the U-M Mobile Developer Community, and our mobile consulting efforts. For applications to be posted on the U-M Mobile Apps Center we will ask the developers if they have performed accessibility testing. Evidence of that may be an email where they acknowledge they have done so. ITS will also work with Technology Transfer to ensure that their process includes a request that applications undergo accessibility testing. The two minor findings related to the Travel Registry and the Michigan app (iOS version) will be corrected by the end of August 2012.

University Audits identified the following key controls during this audit of mobile apps development. ITS relies upon these to achieve the control objectives in the development process and were tested to ensure they functioned as defined.

- Internal testing of all applications
- IIA (Infrastructure and Information Assurance) security testing
- Office of Technology Transfer review of acquisitions
- Rewriting student applications to make them supportable
- Change control procedures related to use of the App Store

University Audit's testing indicated that these controls were effective in creating a robust development process for mobile apps as well as a secure set of U-M mobile applications.

During the development process, testing the mobile apps is collaborative in nature. Those in the University community deemed best equipped to perform the testing are responsible for security, accessibility, and usability testing. IIA conducts some penetration testing for the ITS Mobile Applications Team. U-M Adaptive Technologies is also integral to the mobile application development process. Usability testing is crowd-sourced here on campus. Targeted focus groups of faculty, staff, and students are brought together by ITS to validate functionality.

Making websites accessible for people with disabilities is an integral part of high quality websites, and in some cases a legal requirement. Both the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1991 prohibit colleges and universities from discriminating against students, faculty, and staff with disabilities. The University's Web Accessibility Coordinator and the U-M Web Accessibility Working Group provide support and advice to developers that need to make their sites and applications accessible to persons with disabilities. Testing by U-M Adaptive Technologies effectively ensures accessibility of internally developed apps.

By mitigating the risks outlined above, ITS can ensure continued effectiveness of the development process for mobile apps as well as the security and accessibility of specific mobile applications and mobile websites.

Over the next year and a half, ITS will retire the iOS versions of a number of popular mobile apps including the *Michigan App* and the *Student App* and replace them with HTML 5.0 apps. This new software is being developed in accordance with the Kualii Foundation open source project. The Kualii software is being developed by a partnership of investors that includes U-M, University of Cambridge, Cornell University, Indiana University, HTC Global Services, Inc., and VivanTech, Inc. Use of the HTML 5.0 standard means that ITS can develop one product for all mobile devices, and be able to adapt to the size and capabilities of each device. This cooperative development environment allows U-M to focus on creating valuable information services, rather than rewriting existing apps for each new device.

A formal follow-up to the outstanding issues will be conducted during the second quarter of fiscal year 2013.

Healthcare

Center for Global Health
Report issued June 27, 2012

#2012-102

In 2009, the Provost created the Center for Global Health (CGH or Center) to promote innovative and interdisciplinary global health research on campus and build global health research capacity. The Center is staffed with six full-time administrative positions, and a part-time Director and Associate Director, both of whom are full-time faculty members with academic and clinical duties outside the Center. Over the past several years, the Center completed several activities in support of its core objectives by bringing together faculty and students interested in global health, providing seed money for faculty and student projects, and developing relationships with government and local agencies.

The Provost and the deans of the health sciences schools recently completed an assessment of the organization of campus global health activities. The assessment led to the conclusion that the Center has completed its most important work: it has catalyzed global health research and created linkages across schools and colleges that will enable continued success in global health work at U-M. As a result, the Center will close later this year and a University-wide coordinating committee will replace it. The coordinating committee will collect and disseminate information about global health activities.

The audit was completed prior to the decision to close the Center. The following report contains information and recommendations that may be generally useful for interdisciplinary centers, but will not require specific follow-up by CGH management or the Provost's Office.

The primary objective of the audit was to review key operational processes within the Center for Global Health to determine if policies, procedures, and the internal control structure adequately protect University assets and comply with University policies and procedures. In the planning phase of the audit, University Audits identified operational concerns and the audit scope was narrowed to focus on specific areas related to:

- Program awards
- Financial and operational controls and accountability
- Purchasing, P-Card, and travel expenditures
- Financial reporting and budgetary functions
- Sponsored grant management

Audit procedures included interviews with the Center's staff, testing and analysis of program management, financial operations, and expenditures. The report is provided to the Provost's Office to document audit observations.

Audit Observations

- Governance – The Center's governance structure is primarily advisory in nature. The Faculty Director has broad discretion in choosing education and research topics, locations, and strategic importance and setting funding levels for intramural grants and cost sharing. Some programmatic and funding decisions made by the Faculty Director include awards directly related to the Director's research interests. The Center had several research initiatives, but did not have a method to track and report expenditures by initiative.

Along with advisory committees, the Center would have been better served by an executive committee structure that had direct decision-making authority. An executive committee provides independent oversight and supports programmatic decisions, including funding awards. An executive committee structure also minimizes the appearance of bias for funding decisions. A systematic process for programmatic and financial transparency and reporting facilitates communication between governance members, faculty associates, and staff.

- Administrative Structure – Organizationally, the Center resides administratively in the School of Public Health (SPH), but receives the majority of funding and programmatic review from the Provost's Office. Historically, the Center worked independently with limited oversight or administrative interaction with the SPH. The Center management structure did not provide adequate oversight for administrative processes or staff. The Executive Administrative Director did not monitor business processes such as financial reporting, purchasing, travel expenditures, and grant management. This led to inaccurate and confusing management reporting, lack of transparency and overspending. The management team does not always work collaboratively and support the Faculty Director's management and direction, resulting in an unproductive work environment.

Centers, such as the Center for Global Health, with dual reporting require a clear understanding of administrative roles, responsibilities, and organizational hierarchy. Integrate center administrators as an integral part of the "home" administrative unit (i.e., SPH), attending staff meetings, and periodic updates with senior administrators. Set clear expectations and accountability for administrative staff including up-to-date job descriptions and periodic performance reviews. Center business policies and procedures should mirror and support unit policies. A shared services approach should be considered.

- Travel Expenses and Hosting Activities – University Audits noted a higher than usual number of errors and poor practices related to the processing of travel and hosting expenses:
 - Multiple rejections by Concur auditors for lack of required documentation and/or explanation
 - Vague or missing business purpose
 - Potentially excessive charges for transportation and lodging

- Inaccurate adjustment of per diem when meals were directly charged to a P-Card
- Lack of receipts with appropriate detail
- Misclassification of meals as hosting when only University employees were in attendance
- Expense report approval by individuals who directly reported to the traveller and/or P-Card holder
- Exchange rate conversion errors
- Use of P-Cards for items available through an internal service unit or University procurement contract
- Hosting that did not follow the Provost's Office hosting guidelines

P-Card holders, approvers, and administrative staff involved in the preparation of expense reports need additional training on University travel and hosting policies. The processing of international travel expense reports is complex and requires additional training. The following practices will strengthen controls and streamline approver review:

- Develop internal policies and procedures for Center travel and expense reimbursement that set clear expectations and standards for required documentation, review, and approval. Designate appropriate workflow that ensures knowledgeable review and the appropriate level of approval.
 - Coordinate review and approval process for faculty and staff affiliates from other departments who travel on Center business.
 - Ensure P-Card holders, Concur delegates, and approvers are up-to-date on Concur training. See the Concur Resources website: <http://www.finance.umich.edu/procurement/travelexpense/concur/resources>.
 - Use report names that include a key word or description that identifies the primary reason for the trip or expense (e.g., "travel to Cyprus for NIH cancer epidemiology conference" versus "conference").
 - Utilize the department reference field to group related expenses from multiple expense reports together.
- Internal Control Assessment Certification – Each year, University management is required to assess and certify departmental compliance with University stewardship and fiscal responsibilities as part of an ongoing University initiative to establish and maintain strong internal controls. The annual certification process helps the University fulfill financial management responsibilities towards organizational governance and accountability.

At the time of the audit, the Center was not aware of or engaged in the annual control assessment process and was not included in the SPH process. University Audits identified that the Center's Administrative Manager prepared and processed journal entries without management approval or oversight, conducted purchasing and payroll functions, and reconciled the Statements of Activity. This is an example of a gap in segregation of duties normally identified during an annual internal control assessment and certification process. The Center's activities should be included in the SPH annual internal control assessment and certification process.

- Financial Monitoring and Oversight – The Administrative Manager creates financial statements and distributes them to the management team for review. The financial statement information presented does not agree to M-Pathways, the University business reporting system. Beginning balances do not tie, information is incomplete, and the spreadsheet contains formula errors. When a shadow system is used, the reported financial information must agree to M-Pathways to

report an accurate financial position. Center staff do not have sufficient skill sets to leverage University business reporting systems to design and maintain accurate management reporting.

As discussed in the Administrative Structure discussion above, monitoring and oversight by experienced administrative and financial staff, either within the Center or by SPH administrators, will avoid the shortcomings of inaccurate internally maintained reporting. To ensure internal management reporting is accurate and up-to-date, Center financial staff should be trained and well versed in utilizing the University business reporting systems (M-Pathways).

- Information Technology Documentation – An Information Technology (IT) Assistant Director provides administrative information technology functions for the Center. This includes desktop support, data reporting, system security, and system maintenance. The IT Assistant Director does not document standard operating procedures for system configuration, routine maintenance, system and management reporting, or designate a backup administrator. Documented policies and standard operating procedures ensure IT resources are managed efficiently and effectively, and provide IT support in the Assistant Director's absence. Given the small size and limited complexity of the Center, consider moving generic functions such as network administration and desktop support to other University units.
- Student Awards – The Center grants travel awards to students to pursue global health research interests related to their studies. Center staff should be aware of the special considerations for student travel such as:
 - Standard Practice Guide (SPG) Section 601.30, *Payments/Reimbursements to Students for Non-Employment Purposes*, is a new SPG issued in February 2012. The SPG explains that payments to students for non-employment purposes must be submitted to the Office of Financial Aid. Center-sponsored student travel is normally reimbursed through procurement processes (P-Card, travel expense reimbursements), rather than through the Office of Financial Aid.
 - Standard Practice Guide Section 601.31, *International Travel Policy*, promotes the health, safety, and security of all members of the University community while traveling abroad. The SPG requires that students register with the travel registry and purchase health insurance when they will be travelling internationally. The Center monitored compliance for students travelling internationally for long-term research projects, but not for those travelling for a shorter period, such as to attend a conference.

As the Center is in the process of closing, this report is for information only as an adjunct to the global health assessment completed by the Provost Office and the health sciences deans. The observations may be useful for establishing a clear administrative and oversight authority for other interdisciplinary centers.

UMHHC Community Health Services-Community Programs and Services #2012-214
Report issued June 28, 2012

Community Health Services (CHS) was created in 1997 to align community initiatives across the U-M Health System (UMHS) through program coordination, strategic planning, and resource allocation. UMHS has a strong commitment to not only serve the community through excellent care, but also through programs and services that reach out to those in need. CHS partners with local and state funding sources and health professionals to leverage U-M resources and expertise to improve the health and quality of life of the communities they serve. CHS receives funding from a combination of sources: UMHS, donations, federal, state and local grants, and Medicaid. Until recently, CHS reported organizationally to the Executive Director of C.S. Mott Children's Hospital and Von Voigtlander

Women’s Hospital. A transition is underway and CHS now reports to the UMHS Director of Patient and Family Services and Community Health Services. The reorganized structure is presented below:



UMHS provided nearly \$308 million worth of community benefits to the region in fiscal year 2010. A portion of this is for community-oriented programs, services, and activities directly supported by UMHS and coordinated by Community Programs and Services (CPS).

University Audits’ review focused on the following programs that make up CPS. The Friends Gift Shops did not transition to CHS/CPS until May 2012 and were not included in this review.

Accommodations Program	Oversees the Med Inn Hotel, a 30-room hotel located in the hospital, and two guest houses located in neighborhoods near the hospital that offer family-style accommodations to cancer and transplant patients.
Ann Arbor Meals on Wheels	Manages over 400 volunteers delivering meals to an average of 200 homebound clients six days a week.
Housing Bureau for Seniors	Works throughout Washtenaw County to enable and assist older adults to seek and maintain appropriate and affordable living arrangements. The Bureau administers a foreclosure prevention loan program of approximately 100 loans totaling over \$400,000.
Interpreter Services	Provides interpretation and translation services for patients 24/7, throughout the University of Michigan Health System. Interpreter Services provides support to over 40,000 patient appointments a year covering hearing impaired patients and 43 different languages.
Volunteer Services	Manages over 2,000 volunteers serving in University hospitals, labs, and clinics.
Regional Alliance for Healthy Schools	Operates health clinics at six local schools to provide health care services to students and their families.
Program for Multicultural Health	Promotes culturally competent and culturally appropriate patient-centered care.
Comprehensive Gender Services	Coordinates primary, surgical, and mental health care for the lesbian, gay, bisexual, and transgender community.

The audit focused on reviewing the adequacy and effectiveness of controls within the programs in CPS. Specific objectives included assessing controls over:

- Employment status, timekeeping, and approval functions for temporary employees and independent contractors in the Interpreter Services Program
- Loan and business practices in the Foreclosure Prevention Loan Program
- Grant management and evaluation of program effectiveness
- Cash handling and credit card security
- Contractual obligations, including monitoring activities for the Accommodations and Regional Alliance for Healthy Schools contracts
- Hiring, training, and supervision of volunteer staff
- Fiscal responsibility including purchasing, payroll, budgeting, and reconciliation

Risk and Control Discussion

CPS manages a variety of patient support and community based programs. Much of the activity is off-site, in both traditional and non-traditional patient care settings. Community and social service focused organizations are inherently constrained by tight resources and competing needs. As such, it has a unique combination of risks. The following table describes these risks and actions taken by CPS management to address major risks:

Unique Risk Environment	Management Response
Large volunteer component	Volunteers, staff, and part-time employees are background checked, well-trained, and have undergone required medical screening
Vulnerable client and patient base, including the elderly and children	
High percentage of part-time and contract employees	
Remote supervision of employees working throughout the health system and community	Managers travel frequently to work sites and observe and interact with staff and clients
Culturally diverse staff, client, and patient base	Client and patient comments are regularly reviewed and concerns are addressed
Multiple cash collection points	Federal, state, local and gift supported expenditures are appropriate and in accordance with grant or gift stipulations

Opportunities to improve procedures and strengthen internal controls are discussed below.

- Monitoring Loan Activity – The Housing Bureau for Seniors (HBS) administers a loan fund to assist residents in Washtenaw County who are at risk of losing their home because of delinquent property tax or mortgage foreclosure. HBS receives state and local funding for this program. Applicants must meet established eligibility criteria and complete an application process. Loan recipients are expected to keep in contact with HBS after the loan is awarded.

University Audits reviewed loan files and noted that loan recipients and HBS staff do not stay in regular contact after the loan award. Loan records are incomplete and some loans that are known by program staff to be in default are listed as active. As a result, HBS does not have an accurate picture of active loans.

Loan program guidelines state the loan must be repaid upon sale or refinance of home, transfer of ownership, or death of the homeowner. Examination of active loan files found a homeowner who has been deceased since 2007. Staff notes on other active loans indicate additional deceased homeowners. University Audits also found many older active loan files are incomplete and have missing documentation.

In 2004, University Audits performed a review of HBS and noted similar findings. HBS has not established a systematic method to organize and monitor on-going loan fund activities. Historically, staff turnover is partially responsible for the incomplete or missing documentation. University Audits noted better documentation for recently granted loans.

Management Plan – HBS management is in the process of reviewing loan records and updating the list of active loans and accounts receivable balances. Inactive older loans will be researched and written off if deemed uncollectable. A confirmation requiring a response will be sent to loan holders on an annual basis to verify loan status. Follow-up will be done with non-responding loan holders. Management will also explore other collection options.

- Cash Handling Practices – CPS has multiple sources of cash collections:
 - Donations – Meals on Wheels and Housing Bureau for Seniors programs collect both client and outside donations.
 - Fundraising events – Major fundraising events include Senior Living Week, a golf outing, celebrity servers at local restaurants, and an annual letter campaign.
 - Room fees – The Wilmot Guest House and the Transplant Guest House collect fees for room use.
 - Billable services – Interpreting services are provided for non-patient appointments to businesses, non-profits, and health centers outside the health system.
 - Sales – Interpreter Services sells interpreting training material and sponsors classes for a fee in medical terminology and medical interpreter for the working and aspiring interpreters.

Each program in CPS is managed independently. Some programs have good cash handling processes, but other program areas need improvement. Opportunities exist for CPS to implement consistent controls over cash handling practices in the following areas:

- Documentation of cash handling procedures
- Completion of required cash handling training
- Restricted endorsement of checks upon receipt
- Deposits made on a timely basis
- Segregation of duties
- Documentation, analysis, and reconciliation of cash collected

To improve internal controls over cash handling:

- Establish well documented cash handling procedures for all programs receiving cash and cash equivalents.
- Ensure all appropriate staff, including vendor employees, take the annual cash handling training.

- Incorporate standard internal controls into all cash handling practices; see Standard Practice Guide (SPG) Section 519.03, *Cash Management Policies*, for specific guidance.

Management Plan – CPS program directors are in the process of developing standard cash handling processes and procedures across all collection points. Cash collections for guesthouse room fees are now collected centrally at Med Inn. CPS staff who handle cash will complete annual cash handling training. All cash collections will be reconciled monthly by an individual who is separate from the collection and deposit process.

- **Credit Card Controls** – The PCI Data Security Standards are information security guidelines designed to protect cardholder information and transactions. All major credit card issuers (e.g., American Express, Diners Club, Discover Card, MasterCard, and Visa) require that merchants, such as U-M, comply with the PCI Data Security Standards and be able to demonstrate this compliance. The Treasurer’s Office is responsible for setting up merchant accounts and monitoring compliance with Payment Card Industry (PCI) Data Security Standards.

Meals on Wheels and the Housing Bureau for Seniors receive donations as a major portion of their program funding. Interpreter Services also accepts credit cards as a form of payment for classes and books sales. Some donations are received in the mail via check or credit card. Staff keep donation information on file to confirm each donation is deposited into the correct account. After recording a donation, the checks and gift forms are forwarded to the Gift Processing Office for deposit and processing.

University Audits reviewed documents on file with the Treasurer’s Office and CPS practices, and identified variances from Treasurer’s Office policy. The department received a merchant number from the Treasurer’s Office in 2007 when they established a credit card merchant terminal. Since then they have established an ecommerce site and there have been changes in the staff that process credit card transactions. CPS has not kept the Treasurer’s Office up to date on these changes and is not consistently following current University PCI compliance practices.

Management Plan – CPS is working with the Treasurer’s office to update credit card processes, including ensuring ecommerce website is PCI compliant. Internal policies and procedures are under development and staff are in the process of completing annual credit card handling training.

- **Interpreter Services Program** – Interpreter Services employs four different classifications of interpreters; 1) staff interpreters, 2) temporary interpreters, 3) sign language independent contractor interpreters, and 4) phone interpreters through a third party vendor. The department uses a database to document appointment request, schedule an interpreter, and document appointment outcomes. University Audits reviewed employment practices, timekeeping procedures, and scheduling practices of the different types of interpreter services and noted the following:
 - *Monitoring Program Performance* – Management performs limited program monitoring and evaluation. Until recently the department has not had a database manager on staff that could gather and report on program performance data. The database manager is starting to develop and run reports for management.
 - *Independent Contract Interpreters* – Time reporting guidelines exist for the sign language interpreters. However, time-worked reporting practices are inconsistent among independent contractors.
 - *Staff Interpreters* – Staff interpreters are scheduled for patient interpreter appointments and also perform translation in the office. University Audits review of timesheets and

discussion with lead interpreters found that staff interpreters do not consistently log office work hours in the database.

- Conflict of Interest – Many part-time interpreters provide interpreter services outside of their UMHS duties. Outside employment has the potential to cause conflict of interests. Temporary and contract interpreters, unlike staff interpreters, are not required to sign a Disclosure and Conflict of Interest Statement at hire and on an annual basis.

Management Plan – Interpreter Services has implemented annual conflict of interest disclosure for newly hired interpreters. During the annual review process in August, all conflict of interest disclosures will be updated for existing staff. Formal work standards, including consistent time keeping practices are under development and will be communicated with staff. The database manager continues to develop program performance and other management reporting.

- Monitoring Accommodations Activity – U-M has contracted with Medical Hotel Management Corp. and Select Hotel Management Inc. as third party vendors to operate the Med Inn Hotel. Inpatient family members and patients receiving outpatient services use the hotel. Patient care is not provided in the hotel rooms. The hotel is located in the hospital complex.

The vendor manages the hotel operations and financial activity including staffing, reservations, collecting revenue, and paying hotel operating costs. U-M maintains the building and provides utilities and other infrastructure. On a monthly basis, the vendor remits the net operating proceeds minus a management fee to U-M. Based on discussions with management, low complaint rates, and high occupancy rates, the vendor provides good customer service. CPS management interacts frequently with vendor management and contract staff and has achieved good service results.

University Audits performed a limited review of the vendor contract financial activity for the last twelve months and detected no unusual items or trends. However, the vendor controls both the revenue and expenditure streams with limited CPS financial oversight. Lack of regular financial monitoring poses a risk of vendor revenue diversion or excessive expenditures that could impair profit remittances to U-M.

Management Plan – CPS has requested that Select Hotel Management provide monthly detailed financial reporting, including key indicators and budget variance reporting. On a monthly basis, CPS management will monitor trends and review reports and underlying documentation with vendor.

- Training and Performance Evaluations for Hospital Volunteers – The Joint Commission, an independent, not-for-profit organization, accredits and certifies health care organizations and programs in the United States. The Joint Commission accreditation and certification is recognized nationwide as a symbol of quality that reflects an organization's commitment to meeting certain performance standards. The Joint Commission requires hospital volunteers be properly trained at the beginning of their service and receive periodic performance evaluations.

Volunteer Services manages a large staff of volunteers and they have a good process in place for performing and documenting the screening process, reference checks, and background checks. They have a good Volunteer Orientation Manual and procedures that require volunteers and their supervisor to complete and sign a Volunteer Orientation and Training Checklist and to receive scheduled performance evaluations.

University Audits reviewed several volunteer files. The majority of volunteers had not returned the completed and signed orientation checklist. Management has not implemented their departmental policy of completing annual performance evaluations of volunteer staff.

Management Plan – Management has reminded supervisors of the importance of completing, signing, and returning the checklist. Annual performance evaluation criteria and process are under development. Management will periodically review volunteer files to ensure checklists and performance evaluations are completed.

- Annual Certification of Internal Controls and Gap Analysis – The U-M Office of Internal Controls provides guidance and tools to help units across campus manage financial processes. One such tool is the Annual Internal Control Certification and Gap Analysis Self Assessment Review. University Audits identified that CPS is performing the Annual Internal Control Certification, but not using the required Gap Analysis Self Assessment tool when assessing internal controls. Internal controls are designed to provide reasonable assurance regarding the achievement of compliance and fiscal responsibilities.

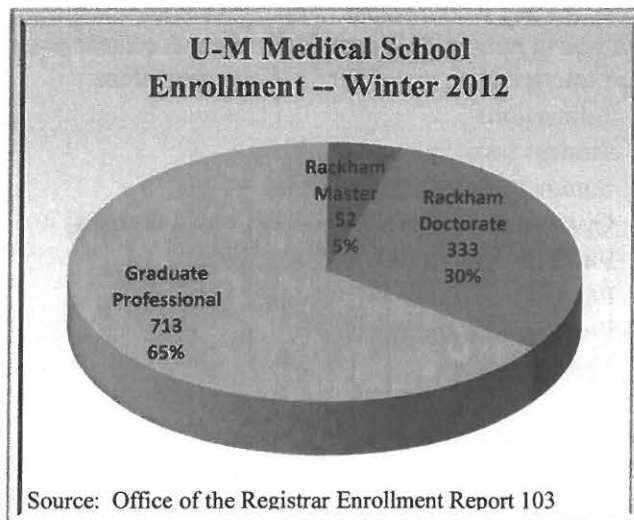
Management Plan – Management is in the process of completing the gap analysis assessment for fiscal year 2012 and is identifying gaps and updating processes. The process will be completed in time for the annual August 15th internal controls subcertifications.

Community Programs and Services has a small dedicated staff that successfully manages a wide range of programs for patients and the broader community. Programmatically, the organization is well-run and maintains a strong service-oriented commitment to patient/client health and well-being. Additional procedures and standardization around business operations will ensure a solid internal control environment and help support overall program effectiveness. A formal follow-up to the outstanding issues will be conducted during the third quarter of fiscal year 2013.

University of Michigan Medical School Office of Medical Student Education
Report issued June 29, 2012

#2012-105

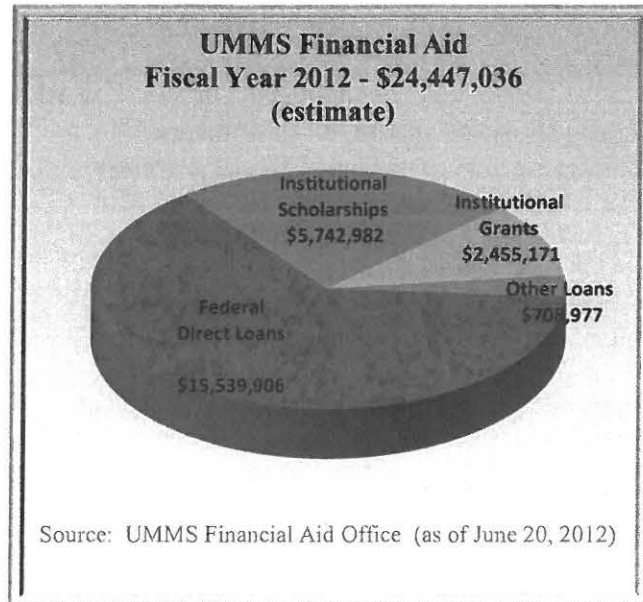
The University of Michigan Medical School (UMMS) Office of Medical Student Education (OMSE) oversees curricular, student, and support services and provides assistance to UMMS faculty and students. In 2010, the Office of Medical Education, which had oversight of curriculum, and the Office of Student Programs, which had oversight of Student Affairs, merged to create OMSE. A new position, associate dean for medical student education (this position will be referred to as the Associate Dean), was created with this merger. The audit focused on business operations in OMSE, including student admissions, financial aid, summer internship programs, and shared services functions.



UMMS ranks among the top medical schools in the nation. Each year, UMMS Admissions Office staff reviews more than 5,000 applications, conducts 600 to 700 interviews, and admits 170 incoming medical

students. UMMS uses a comprehensive approach to evaluate applicants; assessing academic qualifications, personal achievements and experiences, communication skills, and other attributes that demonstrate the applicants' potential to become a successful physician.

UMMS helps students secure financial aid funds to attend medical school. In any given year, about 90% of the student body receives some type of financial assistance. Approximately 40% receive scholarships, grants, and loan funds directly from UMMS. UMMS awarded more than \$24 million of financial assistance in fiscal year 2012, \$8.3 million of which were institutional (UMMS) funds.



OSME administers two research programs during the summer: the UMMS Student Biomedical Research Program and a Premedical Scientist Training Program. The UMMS Student Biomedical Research Program is a ten-week mentored summer internship program that provides opportunities to first-year medical students interested in research. In 2011, participants received stipends totaling more than \$500,000 (up to \$4,500 for each participant), funded through UMMS and National Institutes of Health research

scholarships. The Premedical Scientist Training Program is a ten-week summer internship program designed to interest undergraduates (from U-M and other institutions) in pursuing a combined MD/PhD degree leading to a career in medical research. Participants receive a \$4,200 stipend, housing, and some transportation cost reimbursement. In summer 2011, seven undergraduates participated in the program.

University Audits interviewed OMSE management and staff, reviewed OMSE policies and procedures, conducted process walkthroughs, and performed detailed testing and analyses. The primary objective of the audit was to review the operational internal control environment in OMSE. University Audits evaluated internal control risks in the following areas:

- Admissions
- Student financial aid
- Summer internship programs
- Gift and grant funds (for educational purposes)
- Financial monitoring and oversight
- Payroll
- Procurement and travel
- Cash handling

Observations and Recommendations

Overall, OMSE has good processes in place to admit new students into the School, award scholarships and other financial assistance, manage stipends for summer internship programs, process payroll, and monitor purchasing activity. Cash handling is minimal. The review identified opportunities to strengthen operational controls and streamline processes. The following recommendations are presented to support management's efforts to enhance internal controls and centralize processes for the newly formed organizational structure.

- Restricted Funds – OMSE uses gift and grant funds to support educational assistance to students, research training, and other general needs. Some of the funds are sponsored by government agencies and public or private businesses and donors who set restrictions on how funds can be expended. OMSE management and staff do not directly monitor or manage the funds, but approve and initiate spending. The UMHS Finance Office reports available funds to OMSE, but does not monitor expenditures. As a result, the monitoring of scholarship funding is fragmented and incomplete.

UMMS processes for monitoring scholarship expenses are not robust and donor requirement record keeping needs improvement. Financial Aid Office employees processing awards do not have complete information about donor stipulations and tests showed that financial reports provided by UMHS Finance lists some donor-restricted gifts as unrestricted. As part of the audit process, management discovered unused funds, one of which was unmonitored for over ten years. In the intervening period, a department outside UMMS erroneously charged \$24,000 in payroll costs to a scholarship account. OMSE needs an accurate available funds listing or database to manage and monitor the financial award process. The database should list all funding sources and donor restrictions, and maintain historical and updated information about changes to gift accounts (i.e., repurposing). This will:

- Reduce the risk of making financial aid awards that are not consistent with donor expectations
- Show unit designations and facilitate monitoring

OMSE staff lacks sufficient tools and recordkeeping to ensure scholarships and other financial support are awarded in accordance with sponsor or donor restrictions. OMSE can strengthen controls by:

- Working with UMMS administrators to develop a central database listing UMMS scholarship, grant, and loan funds, usage restrictions, and other pertinent information not tracked elsewhere
- Exploring the impact of the recent implementation of the enterprise-wide Development and Alumni Relationship Tool (DART) to avoid redundant tracking
- Developing and implementing processes to monitor charges to all funds to ensure expenditures are appropriate and align with donor restrictions
- Ensuring OMSE obtains and maintains documentation of expenditure approvals when purposes are not expressly stated on original gift agreements
- Correcting any expenses mischarged to UMMS restricted funds

Management Plan – Medical School Administration has already started gathering data and donor intent information and developing a document that can be used for scholarship funding decisions. OMSE and Dean’s Office staff will meet to develop a process for setting up the data to allow for the appropriate use of these funds. Identified mischarges to UMMS funds will be investigated.

- Financial Aid – The UMMS Financial Aid Office assists students with financial needs through a combination of federal and institutional aid based on a student’s eligibility. The OMSE Associate Dean and the UMMS Financial Aid Director establish criteria for receiving financial assistance. The Medical School Scholarship Committee, which includes the Associate Dean, the Financial Aid Director, and three other OMSE deans and directors, decide which students receive awards and the award amount. In general, this is a well-managed process. Testing showed financial aid information was appropriately captured and flowed into the University’s student accounting system. Opportunities for improvement include:

- Maintaining documentation of committee quorums in decision-making; the scholarship committee does not maintain documentation verifying a quorum of committee members at the time of financial award decisions.
- Developing procedures for reviewing and approving special loans will ensure consistent and equitable practices; occasionally the Financial Aid Office makes student loans outside the normal financial aid award process and there is no written process for these exception-based loans.

Management Plan – OMSE will develop and document procedures for processing awards outside the normal financial aid process, including an approval protocol. Going forward, OMSE will document attendance information in Scholarship Committee meeting minutes. Meeting minutes will also capture award-decisions.

- Admissions – A review of admission processes showed the UMMS Admissions Office has robust processes for reviewing admission applications, selecting interviewees, conducting, and documenting interviews, performing final reviews, and offering admissions. In fiscal year 2012, Admissions staff began maintaining committee meeting minutes to show a quorum of Admissions Executive Committee members approved admission decisions.

The review identified an opportunity to enhance controls over premedical coursework processes. Admissions staff members are responsible for reviewing application materials of prospective students and manually scanning transcripts to verify prospects completed premedical coursework. Matching institutional courses and credit hours to U-M requirements is complex because there is no standard naming convention and comparability between institutions. Admissions staff members informally review and determine applicants have met coursework requirements, but reviews are not formally documented. A more structured documented process provides assurance of fair admission practices.

Management Plan – Management will develop a process to facilitate Admissions' process for verifying premedical coursework completion.

- Payroll Controls – University Audits reviewed payroll processes with timekeepers from three units. OMSE payroll processes are decentralized, with multiple timekeepers sending reminders to staff to complete online time reports. This is a legacy of separate timekeeping units for the former Office of Medical Education and Office of Student Programs entities.
 - Payroll costs represent a large portion of the unit's total expenditures and should be monitored carefully. Departments are responsible for verifying payroll transactions. During the payroll review, University Audits noted:
 - Gross Pay Registers (GPR) are not regularly reviewed or reconciled to schedules or other internal timekeeping information. One timekeeper stated that when her unit stopped receiving GPRs by mail, she assumed this responsibility had moved to a central administration office. GPR reviews and reconciliation play an integral role in controlling the University's payroll expenses.
 - Approval and monitoring of funeral leave usage needs improvement.
 - Timekeepers are not consistently correcting earnings miscodes. Improper earnings codes (e.g., TIP), that were noticed after the approval process, were not corrected in subsequent pay periods. This can lead to misleading payroll information and reporting.
 - One unit manually reenters time data into a separate system (after employees entered data into the University timekeeping system). This practice unnecessarily duplicates

effort. The unit administrator and timekeeper were not aware they could download time data directly from the University's timekeeping system.

Management Plan – Management will centralize payroll processes for full-time employees in OMSE departments and perform GPR reconciliations for all employees. OMSE will distribute guidelines for using and recording funeral time. Key staff will receive training to ensure they understand how to correct inaccurate payroll data and use existing reporting systems to download time data (recorded in University systems) for use in department reports.

- **Financial Training** – Training and development increases employee knowledge and skills while helping to optimize productivity and motivation. The audit highlighted training opportunities that will enhance the control environment and improve productivity:
 - Some OMSE administrators do not have access to key financial reports in M-Pathways such as M-Reports and Business Objects. Currently a substantial amount of time is spent re-keying financial data into Excel spreadsheets to help identify outliers and trends. M-Pathways reports and the Data Warehouse can be used to streamline management analysis and reporting.
 - Some expense approvers have not taken the Concur Approver certification course, an online training course that Procurement Services requires all employees approving expense reports (including those doing “first level” approval), to complete annually.

Management Plan – OMSE administrators will read SPG guidelines and assess Management Oversight Reports listed on the office of Internal Controls' website to determine what, if any, additional reports OMSE staff should review as part of their periodic reviews of financial data.

- OMSE will ensure staff receives sufficient training and appropriate data access roles to use these key financial reports. Management will also ensure all expense approvers complete the online Concur approval course.

OMSE administrators continue to look for ways to centralize processes and unite the former Offices of Medical Education and Student Programs into a single cohesive unit. Further development of roles and responsibilities will continue to strengthen operations and foster goals. University Audits will conduct a formal follow-up during the third quarter of fiscal 2013 to review progress on management's corrective actions.

Follow-up Reviews

Michigan Nanotechnology Institute for Medicine and Biological Sciences

#2012-218

Original Report issued November 22, 2011

Follow-up report issued June 13, 2012

Based on the results of the review **this audit is closed.**

- **Subcontract Payments to NanoBio** – A subcontract of a federal grant with the National Institutes of Health exists with NanoBio Corporation (a University start-up company with collaborative research and development projects with MNIMBS covered by a Conflict of Interest Management Plan). Under the subcontract, NanoBio incorrectly invoiced the University for salaries in excess of Federal salary caps and administrative costs already included in indirect costs. The invoicing issues have been resolved and the indirect cost rate has been modified. Invoices have been corrected, reconciled, and paid appropriately.

- Financial Management – All Statements of Activity and budget reports now contain a formal acknowledgement of management review and approval. MNIMBS administrative staff manually reconcile Statements of Activity and are utilizing online training in eReconciliation.
- Safeguarding of Assets – Asset tagging discrepancies at the Engineering labs were resolved. MNIMBS completed an inventory of current assets and worked with Property Control to correct misallocated equipment.

UMHS Customer Service Charity Care Policy
Original report issued June 21, 2011

#2011-107
Follow-up report issued June 25, 2012

In June 2011, University Audits completed a review of *UMHS Policy 01-03-003, Professional and Hospital Customer Service Charity Care Policy and Procedure* and the *UMHHC Bad Debt Policy*. Both policies are affected by aspects of the federal Patient Protection and Affordable Care Act (PPACA) as part of national health care reform. At the time of the audit, the policies and processes were in transition in order to meet specific elements of health care reform. The purpose of this memo is to report that required policy changes have been made and operationalized over the past year. A summary is presented below. **This audit is closed.**

Summary of Changes under PPACA

Topic/Area	Description	Audit Observations
Emergency Medical Treatment and Labor Act (EMTALA)	Additional statement that UMHS complies with EMTALA ¹² requirements to treat patients in Emergency Department without regard to financial status.	Policy clarification only, UMHS has always followed EMTALA regulations.
Discounts	Discount complies with PPACA test that charity care net of discounts not be in excess of hospital's best insurance contracts.	Discount is average of three lowest commercial rates negotiated with UMHS. Fully incorporated into patient counselor job aids, forms, and processes.
Publicize	Strengthened policy and practices to widely publicize charity care availability for qualifying patients.	<ul style="list-style-type: none"> • New financial assistance website available • Patient financial counselors readily available at multiple patient contact points during normal business hours • Posters and brochures under development
Collections	Additional reference to the separate billing/collection policy, which outlines the process for collection agency and credit agency reporting. Also asserts that UMHS will not undertake extraordinary collection efforts without screening patient for charity care.	Policy clarification only, UMHS has not historically undertaken extraordinary collection efforts without screening patient for charity care.

¹² Emergency Medical Treatment and Labor Act (EMTALA) is a federal law that requires anyone coming to an emergency department to be stabilized and treated regardless of their insurance status or ability to pay.

Summary of Changes under PPACA

Topic/Area	Description	Audit Observations
Community Needs Assessment	As part of health care reform, UMHS must conduct a community needs assessment.	UMHS is part of an on-going coalition assessing community needs through the Washtenaw County Health Improvement Plan. A dedicated UMHS community assessment director was named in fiscal year 2012.

Camp Davis Rocky Mountain Field Station
Report issued July 28, 2011

#2011-813
Follow-up report issued June 27, 2012

A follow-up review was conducted to assess progress toward improving processes related to fire safety, inventory management, emergency planning, cash handling, and contracts with external entities. Camp Davis management has adequately addressed all of the audit recommendations. **The audit is now closed.** The following summaries detail updates and improvements for each of the areas noted in the audit report.

- Fire Safety and Inspection – To improve fire safety at Camp Davis:
 - The Project Coordinator developed a new safety manual, working closely with the U-M Department of Occupational Safety and Environmental Health (OSEH).
 - All smoke detectors will be checked monthly to ensure they are working properly.
 - The fuel fired appliances at Camp Davis were inspected on June 7, 2012, prior to the majority of students arriving.
 - All of the custodial and kitchen staff received fire extinguisher training. Each year, the staff will receive this training at the start of camp.
 - Each cabin at Camp Davis now has fire safety information posted.

There is a vehicle motor fuel-dispensing facility located on Camp Davis property. The Project Coordinator is working with OSEH to determine the costs of building a berm around the facility that would be large enough to contain a spill. To comply with state laws, the facility is currently empty and not being used. By 2013, there will be a berm built around the facility or it will be removed.

- Documented Policies and Procedures – Camp Davis management has documented several important processes for operating the camp. Some of processes that have been drafted to date include:
 - Building and facilities manual
 - Kitchen staff manual
 - Financial aid policy

Documented procedures should be updated on a regular basis to incorporate new processes and ensure they are accurate.

- Inventory Management – To improve the management of inventory at Camp Davis, assets over \$5,000 and those that are potentially dangerous were inventoried. These items will be counted at the start and end of each camp, with follow up as necessary if items are misplaced. Sign-out sheets are now used for additional items, such as linen and satellite phones.

The Project Coordinator is developing a maintenance plan for the facilities and equipment at Camp Davis. The plan covers the following best practices and actions for preventative maintenance:

- Inventory building components and assess their conditions
 - Build the capacity for ranking maintenance projects and evaluating their costs
 - Plan strategically for preventive maintenance in the long- and short-term
 - Structure a framework for operating a preventive maintenance program
 - Use these new tools to optimize the preventive maintenance program
- Documented Emergency Plans – There is now a documented Emergency Action Plan for Camp Davis and it is reviewed with all Camp Davis employees. The plan is comprehensive and incorporates several methods to pre-plan for potential emergencies, information about notification and warning levels, assignments and responsibilities, evacuation routes and meeting places, fire prevention and workplace hazards – including a hazard level classification for all Camp Davis buildings, emergency contact information, and a process for completing a post-emergency evaluation. The plan also includes specific procedures for responding to the following potential emergencies:
 - Fire
 - Tornado or severe thunderstorm
 - Blizzard
 - Earthquake
 - Flood
 - Criminal activity/hostile intruder
 - Armed subjects/active shooter situation
 - Bomb threat
 - Serious medical emergencies
- Cash Handling – The majority of cash and check course fee payments for Camp Davis are now billed and collected centrally through the student’s account. This year, the \$50 deposit and one course fee was collected within Geological Sciences. In the future, it is likely that all cash handling will be done centrally. For the cash and checks that are collected in Geological Sciences, the following improvements in cash handling controls were implemented:
 - Cash handling procedures are documented
 - Checks are restrictively endorsed when received
 - Checks are no longer copied
 - Revenue received is reconciled to the amount billed
- External Entities – A template agreement/contract for external entities that use the Camp Davis property has been drafted and reviewed by the Office of the General Counsel. This template will be used for all external entities that use the property. Camp Davis now has a federal sponsored project grant to use when the funds they receive related to these arrangements are from a federal government source. This way the indirect costs can be handled properly.

Plant Operations Information Management and Reporting
Original Report issued December 22, 2011

#2011-102
Follow-up report issued June 27, 2012

University Audits concluded an audit of Plant Operation’s information management and reporting control environment in December 2011. The audit identified a number of opportunities to improve the department’s management of its many data systems, tools, and reports, including:

- Developing a comprehensive inventory of existing systems and reporting throughout the division, prioritizing opportunities to integrate departmental data into systems supported at the division level
- Evaluating the information needs of Plant departments and the campus community to identify any gaps and develop solutions
- Providing guidance to departments for proper management and use of information systems and management reporting
- Identifying resources to assist in identifying effective technical solutions for populating PeopleSoft with additional Plant data to support decision making across the University
- Communicating guidance and providing tools for identifying, classifying, and validating data necessary for management of operations

University Audits recently contacted Plant Operations for an update on the status of corrective actions, and learned that the department experienced a change in IT leadership earlier this year. Plant management hired a new IT manager in late May 2012, but because of the transition, implementation of corrective actions has been slow.

Providing ready access to accurate, meaningful, and complete Plant data is essential to effective operations and oversight. Plant leadership remains committed to building a robust data management and reporting platform to support this need. With the appointment of new IT leadership, Plant intends to prioritize this effort.

University Audits will conduct a formal follow-up review to assess progress during the second quarter of fiscal year 2013

ICA Stephen M. Ross Academic Center
Original Report issued November 4, 2011

#2011-202
Follow-up report issued June 27, 2012

In November 2011, University Audits issued an audit report regarding facility usage at Intercollegiate Athletics' (ICA) Ross Academic Center (Center). The Center houses ICA's Academic Success Program (ASP), which provides academic services and support to student-athletes. Because ICA staff did not track all visits to the Center, University Audits was unable to provide specific information about the number of people using the facility throughout the day. The Center also lacked a centralized process to track University-owned laptops loaned to student-athletes. The audit report listed opportunities to manage operations more resourcefully by developing systems to track visits to the Center and monitor laptop inventories.

University Audits recently performed a follow-up review to report on actions taken by management to address audit recommendations. A summary of management's actions is noted below. **This audit is closed.**

- Laptop Loan Programs – University Audits recommended management develop stronger controls to account for laptops. Center staff began conducting semiannual physical inventories at the end of fall and winter semesters to verify ASP staff accounts for all laptops. University Audits reviewed the winter 2012 inventory count completed in May 2012, which showed no missing laptops. Management stated usage is declining as many students now have their own laptops. The Center does not plan to purchase new laptops when existing laptops stop working.
- Attendance Tracking – University Audits recommended management consider installing optical turnstiles or other passive devices that electronically capture activity levels. Management

engaged a consulting team from the College of Engineering's Industrial and Operations Engineering Senior Design class to help the Center improve efficiency by analyzing time studies that detail utilization and advocate restructuring the layout of underutilized areas. The team presented its findings in April 2012 and recommended the following to management:

- Replace big over-stuffed chairs with smaller space-saving furnishings
- Develop a reservation system to use private study rooms
- Make noise-cancelling headphones available to students
- Investigate a traffic tracking system to collect facility usage data

Management drafted a Facility Plan Proposal in May 2012 to recommend ways to alleviate space limitations and better manage the facility. Recommendations included:

- Dedicating specific space to students with study requirements during peak hours
- Refurnishing existing space to create more study space
- Monitoring student behavior to create a more conducive learning environment
- Utilizing more appointment-based tutorials versus drop-in-based tutorials
- Expanding building and tutorial hours and adjusting facility cleaning schedules to meet needs of students, staff, and visitors
- Limit non-academic activities during peak hours
- Installing passive electronic counters at all entrances to monitor Center traffic

Management shared the Proposal with ASP staff and is awaiting staff comments. Management expects to finalize the Proposal by the end of June, and fully execute the plan before the fall semester begins. University Audits has reviewed the draft facility plan and noted the plan provides cost-effective improvements in the study environment and space utilization.

Ross School of Business Follow-up Review
Original report issued October 19, 2011

#2011-202
Follow-up report issued June 29, 2012

University Audits issued an audit report for the Stephen Ross School of Business in October 2011. A follow-up review was conducted to assess progress toward addressing observations included in the report. Some of the areas highlighted include budget preparation and review, management of the Ross Art Collection, oversight of units, institutes and centers, coordination of international programs, and continuity of operations planning. Significant progress has been made in many areas, though some require additional or ongoing efforts. A second follow-up will take place in the second quarter of fiscal year 2013. The status of the items from the audit report is noted below.

- Budget Preparation and Review – The existing budget process has been documented, and work continues to help units facilitate both the annual budget preparation and their quarterly reviews with the Ross Finance Office. Significant time has been spent on outreach and education efforts with the units. The associate deans are also more directly involved in the review of the budget for the units they oversee. Finance Office staff duties and responsibilities have been realigned to provide more support for Ross units. The Finance Office should continue work to increase the usability of budget monitoring tools and provide educational opportunities for financial administration throughout the School. **This issue is closed.**
- Ross Art Collection – The Business School hired a consultant from Artpack Services, Inc. to manage their art collection. They obtained input from the University of Michigan Museum of Art to help develop the RFP for the art collection management services. The consultant performed a complete inventory of the Ross Art Collection. These inventory reconciliations will be performed on an annual basis. The maintenance and care instructions for each object is now included in the art inventory management system. Cultureware is the name of the vendor that

supports the database used to track the collection. Through coordination with the Artpack consultant and the Business School, all updates to the system are performed by the vendor, who is located offsite. This helps to ensure an appropriate separation of duties with respect to the art inventory and reconciliations. There is now a formal numbering system for the art collection that indicates the year the art was acquired by the University. Through coordination with Risk Management, the art collection is properly insured.

University Audits encourages the Business School to formally document their policy and procedures related to accepting gifts and disposing of art objects. This will help ensure consistency in the process. **This issue is closed.**

- Institutes and Centers – Oversight and Monitoring – The Associate Dean for Faculty and Research (ADFR), to whom most institutes and centers report, has done substantial work to increase oversight of those units. Centers and institutes reporting to the ADFR are required to prepare an annual report that details their mission, metrics of success, accomplishments, and both short- and long-term goals. The annual reports are submitted at the same time the ADFR is working with the units to prepare their yearly budget, to ensure that the two documents are complementary. The ADFR has been brought into the budget process for the centers and institutes, and works closely with the Finance Office to review projected and historical budget activity. The ADFR has also hosted a series of Center Summits, which include both the faculty director and the managing director of each center or institute. These meetings have greatly increased communication and networking between the centers, opening the door for collaboration and sharing of best practices. Center and institute administrators are also included in the Finance Office's training sessions on internal controls and will be required to complete subcertifications, as noted below.

Consider including the few centers and institutes that do not report to the ADFR in the Center Summits and the annual reporting process. This gives the opportunity for increased communication and offers some standardization of best practices. **This issue is closed.**

- Loans to International Students – During the audit, the Business School decided to stop the loan program and has since worked with the Associate Vice President for Finance and the Controller to adequately account for the liability from existing outstanding loans. However, concerns were subsequently raised in the Business School that the decision may be negatively effecting their admission rates. The Business School is monitoring similar loan programs for feasibility and is aware that no actions should be taken without appropriate discussions with and approvals by the Central Finance and Provost offices. **This issue is closed.**
- International Programs – Coordination – The Business School created a Program Manager position that will work with the Associate Dean for Global Initiatives. The new Program Manager should start in the fall of this year and will take the lead on developing School-wide policies and best practices related to international activity. The goal is to leverage existing expertise in the School and available resources from other areas of the University. Administrative personnel that coordinate international activities were reminded of the requirement to register international travel with the University's Travel Registry and obtain the appropriate travel abroad health insurance. During a second follow-up, University Audits will assess the progress toward coordination among international programs at the Business School and review any relevant policies and procedures.

- Verification of Aramark Reported Data – The Business School is currently renegotiating the contract with Aramark. Once finalized, the new contract will include a requirement for Aramark to share relevant internal audit reports and other internal reviews with the University. This requirement is in addition to the right-to-audit clause. The contract should be finalized by the end of the summer, at which point the Business School plans to develop a process to review Aramark transactions to help validate the accuracy of the financial information provided to the University. The Business School was not able to incorporate Aramark reporting into M-Pathways to provide real-time oversight of Aramark transactions and reporting. During a second follow-up, University Audits will review the updated contract with Aramark and confirm the Business School has a process to validate the accuracy of Aramark reporting.
- Subcertification of Internal Controls – The Finance Office has planned a series of “lunch-and-learns” that will introduce individual components of the gap analysis worksheets. Initial response from the first session was positive, with some units self-identifying areas of noncompliance through discussions related to internal controls. The final session will be related to reporting requirements for unit leadership to adequately monitor processes within their unit on an ongoing basis. Once the training sessions are completed, units will be required to submit an annual certification that they have completed their internal control assessments to the Finance Office. During a second follow-up, University Audits will assess the first completed control assessment cycle.
- Credit Card Monitoring and Guidance – The first “lunch-and-learn” training session (explained above) covered internal controls over credit card processing. The presentation detailed the individual unit’s monitoring responsibilities as well as the finance team’s monitoring responsibilities. Emphasis for the credit card training was on separation of duties and proper refund processing. Units are required to document their own individual credit card processing procedures as part of the subcertification of internal controls. **This issue is closed.**
- Continuity of Operations Planning – The Business School located the continuity of operations plan that was developed in 2009 and updated the plan to reflect current operations. Critical operations of the School are defined in the plan, as well as essential resources and contract services. The plan includes detailed steps for communications, operations, and technology depending on the level of threat for a particular incident. Specific tasks are assigned to various individuals, with a two alternates; contact information is also provided. There is a detailed periodic review section in the plan to help ensure it is kept up-to-date. The plan is stored on the School’s leadership shared drive, and hard copies were provided to individuals that do not have access to the drive.

Every functional area of the School was asked to develop a business emergency plan following a set of assumptions and guiding principles provided by the School’s leadership. Units are in the process of ensuring these plans are also current. During a second follow-up University Audits will review a sample of individual unit business emergency plans.

- Unit Assessments – No specific action has occurred regarding the individual unit observations made during the audit. However, the Finance Office did factor the recurring observations noted into their lunch-and-learn seminar topics, to address the issues with a broader audience. During a second follow-up, University Audits will review the completed subcertifications for these units to ensure management has implemented proper controls.

The Institute for Research on Labor, Employment, and the Economy (IRLEE) audit report was issued in February 2012. University Audits recently conducted a follow-up review to assess the status of management's corrective action plans. **This audit is closed.** See summaries below for additional information.

- Expense Reporting – University Audits' review of recent expense reports indicated increased scrutiny by the Business Administrator. Reports contain clear business purpose, supporting documentation, consistent naming methodology, and comply with University policy. The Office of the Vice President for Research is in the process of developing a unit-wide policy to encourage use of the department reference field in Concur.
- Motor Pool Cars/Fuel Monitoring – IRLEE instituted new policies to strengthen oversight and control of motor pool car usage and fueling processes. A modified pool car log includes business purpose, odometer readings at pickup and return, and fuel purchases. The new process includes reconciliation with U-M Transportation department charges and expense reports. Management is discouraging the use of personal vehicles for business travel when University vehicles are available. An analysis is in process to determine the cost effectiveness of motor pool cars based on historical and projected usage.
- Cash Receipts – Management implemented a new process for cash receipt and deposits that ensures timely and accurate deposits. Cash receipt log modification, improved document retention, and reconciliation between cash deposits and monthly Statements of Activity strengthened cash handling controls.
- Financial Management – Management implemented improved financial controls over supporting documentation and separation of duties. Duties were realigned and an individual who is not involved in transaction processing is now responsible for all Center Statements of Activity reconciliation. Supporting documentation for actual costs for a foreign subcontractor are reconciled and retained.

University Audits issued the "Use of Federal Hardware in the Flux HPC Cluster" audit report in April 2011. An initial follow-up in June 2011 closed one of the two open action items. A second follow-up review was completed to address the final item. **This audit is now closed.**

- Recharge Rate – University Audits recommended that Flux recharge rates be revised, separating the storage and infrastructure component from the equipment rate to allow complete and accurate billing of users supplying their own hardware. The Flux fee structure underwent a comprehensive review during fiscal year 2012, with new rates effective July 1, 2012. The new rates are built from components so that subscribers who bring their own computing hardware to the cluster can be charged an appropriate portion of the specialized infrastructure and facilities costs incurred to operate the cluster. Rates are explained on the Office of Research Cyberinfrastructure (ORCI) website, which provides abundant information and assistance to

researchers and research administrators planning for their projects' high performance computing needs. The changes in fee structure appropriately address the recommendation.

School of Dentistry – Admissions and Financial Aid
Original Report issued October 26, 2012

#2011-812
Follow-up report issued June 29, 2012

The School of Dentistry (SoD) administers its own admission and financial aid processes for the Doctor of Dental Surgery (DDS) program. University Audits performed a review of these areas to evaluate them for reasonableness, fairness, and compliance with SoD's policies and procedures. Overall, we found the processes to be fair and reasonable and no instances of noncompliance were observed. Some observations and recommendation for further improvement were documented in the audit report issued in October 2011.

University Audits recently performed a follow-up review to assess the status of management's action plans. The SoD Admissions Office has already made several enhancements to their processes. Work is under way to address the remaining items, specifically those related to documentation of policies and procedures and those that have an IT component. We encourage management to complete these plans before the start of the next admissions interview cycle in the fall 2012. A second follow-up review will be performed during the second quarter of fiscal year 2013. A summary of management's progress is noted below.

- Multiple Mini Interviews – After the initial holistic application review, SoD uses a Multiple Mini Interview (MMI) approach to select candidates for the DDS program. MMI is a relatively new interview methodology; there is little data to indicate its predictability of success in dental programs. SoD has established a procedure to assess the effectiveness of the MMI process. Data from each graduating class is analyzed annually and compared with MMI admission data for that class. Results are used by the Admissions Committee to make decisions on the effectiveness and continued use of this method. SoD is in the second year of this process. As more classes graduate, more data will be available. We encourage SoD to continue the annual analysis and make changes to the MMI process as appropriate.

Building a robust, reliable, and well-trained interviewer pool is an important step in the MMI planning process. Currently, training for interviewers is based on staff-led training sessions. To further enhance training and education, the Admissions Office is working on developing training materials, including handouts, forms, and short videos.

- Application Review – To increase the number of applications reviewed, the following steps were taken:
 - The Admissions website was updated to emphasize the highly competitive nature of the application process and that applying early, along with a competitive application, increases the chances of a timely review.
 - Efforts were made to review all in-state applications. The Admissions Office ran reports to identify and focus on reviewing Michigan applications.
 - For the upcoming admissions cycle, the Admissions Office will use a bell curve for quantifiable academic data. The Admissions Director will identify the strongest and weakest applicants, which will allow the Admissions Committee members to focus on reviewing applications that require a more thorough and comprehensive evaluation.
 - The Admissions Office plans develop a checklist that will facilitate the application review and remind the Admissions Committee Members of the holistic review process.

To move towards a more balanced distribution of committee review and increased number of applications reviewed, we encourage the Admissions Office to continue sharing application review statistics with the Admissions Committee members on an on-going basis. We also support continued efforts to ensure a more timely review of Michigan resident applications that become complete. **This issue is closed.**

- Documentation
 - The Admissions Office is working on documenting policies, procedures, and guidelines for the admissions processes. Documented procedures make processes more transparent, assist with staff training, and ensure continuity of operations. University Audits will reassess progress on this item during the second follow-up review.
 - The new online reviewer's portal is an improvement from the hardcopy review process. It captures information that was not tracked in hardcopy files, including reviewer information, review date, and reason for denying applications. Support documentation for withdrawals is now maintained electronically. The final M-Pathways roster is reviewed at the end of the admissions cycle and any inconsistencies in application status are corrected at this time. **This item is closed.**

- Application Fees – To ensure application fees were deposited in full, total revenue in the SoD application fees account is compared to total revenue from NelNet¹³ reports. With assistance from IT staff, the Admissions Office is investigating ways to create queries in M-Pathways to compare the number of students who are marked as having paid the fee with the total revenue.

- Spreadsheet Controls
 - The Admissions Office considered online, real-time solutions for recording MMI scores. There are significant financial and logistical challenges related to creating and maintaining a database system and providing all the necessary hardware to the interviewers. The Admissions Office has incorporated additional quality checks as compensating controls. Specifically, one staff member enters the data, another staff member checks for consistency and completeness, and the Admissions Director performs a final review.
 - SoD now uses WebAdmit, a new online application tool, for the Internationally Trained Dentists Program. WebAdmit has the ability to run reports, sort data, etc. Application data is uploaded electronically to M-Pathways. This has significantly reduced inefficiency and inaccuracy risks related to manual data entry. **This issue is closed.**

¹³ A third party that processes online payments.

Open Audits Follow-up Table
June 30, 2012

Audit Title	Report Date	Issues	Expected Completion
UM-Flint Business Continuity 2011-303	8/12/11	University impact analysis; BCP standards template; business continuity testing; disaster recovery plan	First Follow-up March 2012 <hr/> November 2012
ITS CTools Software Development Processes 2011-808	8/29/11	Documentation; back-ups; use of wush.net	August 2012
College of Literature, Science, and Arts Information Technology Asset Management 2011-311	7/22/11	Use of the K2 client; firewalling license servers; changing and deleting users; key process areas; project management; disaster recovery and business continuity plans testing; management of copyrighted software; licensing processes; maintenance of access control lists	July 2012
Information and Technology Services eResearch Proposal Management 2010-304	6/27/11	Contractual restrictions on vendor access; "Site Manager" access	First follow-up March 2012 <hr/> July 2012
Information and Technology Services MCommunity Sponsored Accounts 2011-304	11/22/11	Sponsorship administrator roles; improper permissions; monitoring of sponsored accounts; data verification policy; recurring training; policy enforcement	October 2012
Institute of Social Research Data Security 2011-308	12/7/11	Identification and assessment of sensitive and critical systems; risk mitigation activities; IT security incident management; security plan	August 2012
UMHS Lost Laptop Exercise 2011-809	12/16/11	Risk assessment; encryption; compliance and security awareness training	November 2012
North Campus Auxiliary Service Building/North Campus Data Center 2011-301	2/3/12	Security cameras; service level agreements	July 2012
Information and Technology Services DNS - Domain Name Service 2012-301	5/2/12	Recursion on authoritative name servers; recursion - external clients; zone transfer authorization; authenticated zone transfers; DNS architecture documentation; host operating system; performance metrics; server access	December 2012

Automotive Research Center 2012-217	6/25/2012	Administration; grant management; financial management/oversight; asset management	December 2012
Information and Technology Services Mobile Applications 2012-308	6/29/12	Accessibility	December 2012
UM–Flint School of Health Professions and Studies 2010–209	1/25/11	Segregation of duties; faculty and staff certifications; privacy and data security; policies and procedures; P– Card controls; conflict of interest and conflict of commitment management; affiliate payment processing	August 2012
University of Michigan–Flint Educational Opportunity Initiatives 2010–211	2/18/11	Strategic oversight and guidance; campus support and collaboration; budget and financial management; staff management; event management; business continuity; documentation of policy and procedure	First Follow-up April 2012 November 2012
Conference Services 2010–102	2/25/11	Contract compliance; department accounting and reporting; billing and payment accuracy; payroll and time reporting; statement of activity reconciliation; background check verification; client management	First follow-up April 2012 September 2012
Division of Student Affairs Recreational Sports – Club Sports 2010–816	3/2/11	Sponsored student organizations; guidance; financial management; practice, game, and fitness space; medical support; property	First Follow-up April 2012 March 2013
Financial Analysis – Management of Asset Data, Space Data, and University Surplus 2010–111	5/10/11	Staff oversight; outside trucking; sale of goods	First follow-up January 2012 September 2012
Leased Employees 2011–112	6/7/11	Central process owner; identification of leased employees; U–M guidance; contracts	July 2012
University Unions 2011–814	6/15/11	General control environment; financial monitoring and oversight; purchasing management; human resource management; building renovation and maintenance	September 2012
Financial Considerations for International Activity 2011–101	6/30/11	Coordination of effort; documented policies and procedures; currency exchange; cash purchases; international bank accounts	December 2012
UM–Dearborn Office of the Provost 2011–210	6/30/11	Segregation of duties; timekeeping; policies and procedures; Fairlane Center procedures; collections and exhibitions	July 2012

Ross School of Business 2011-202	10/19/11	International programs coordination; verification of Aramark reported data; sub-certification of internal controls; continuity of operations planning; unit assessments	First follow-up June 2012 _____ November 2012
School of Dentistry Admissions and Financial Aid 2011-812	10/26/11	Multiple Mini Interviews (MMI); application review; documentation; application fees; spreadsheet controls; need-based aid	First follow-up June 2012 _____ November 2012
Intercollegiate Athletics Complimentary Tickets 2011-110	11/16/11	Documented policy and procedure; monitoring and oversight; recording of complimentary tickets; complimentary parking and access passes; system access and use; compliance monitoring	September 2012
Plant Operations Information Management and Reporting 2011-102	12/22/11	Data management; reporting and analysis	Review progress June 2012 _____ Follow-up December 2012
e-Verify 2011-302	2/20/12	Contract information; identification of employees; document retention; e-Verify notice requirements; subcontract language; e-Verify System user access	September 2012
Rackham Graduate School Institute for Human Adjustment 2012-219	2/27/12	Patient receivables; Patient Protection and Affordable Care Act of 2010; segregation of duties; cash and cash equivalent handling	December 2012
University Safety and Security Communication, Reporting, and Incident Investigation 2012/809	02/10/12	Communication among University safety and security organizations; privacy and law enforcement; duty to report; emergency response; shared reporting system; lessons learned; training; organizational structures; culture	Quarterly
College of Literature, Science, and the Arts Museum of Natural History 2012-224	03/23/12	Inventory tracking system; cash handling and security; merchandise management; continuity of operations planning; hazard training and safety documentation; segregation of duties; internal controls certification; on and off-boarding checklists; student docent screening; payroll; conflict of interest or commitment process;	September 2012

University of Michigan Facilities and Operations Parking Operations 2012-107-1	3/27/12	Staff use of patient/visitor parking; override controls for gate operations; monitoring of parking activity; imprest cash funds; credit card controls; special events parking contract	December 2012
University of Michigan School of Public Health Office of the Dean 2011-211	5/25/2012	Financial assistance; admission practices; internship funding; conflicts of interest and conflicts of commitment; timekeeping practices	March 2013
UM-Dearborn College of Engineering and Computer Science 2012-302	6/29/12	Financial oversight; documented policies and procedures; conflict of interest and commitment; training and facility safety; contracts, grants, and agreements; asset management; gift handling and monitoring; Engineering professional development; incident response plan; key logs; vulnerability scans; configuration control policy; disaster recovery plans of IT; data security procedures	March 2013
International Institute 2012-101	6/29/12	Oversight and monitoring; international travel; Concur; unit subcertification of financial results and internal controls; copies of checks;	December 2012
UMHS Michigan Health Corporation 2011-109	6/30/11	Assess effectiveness of JV compliance programs; standardized management analysis and operational reporting; streamline consolidation accounting; update COI policy; documentation of board deliberative process	July 2012
Medical School Department of Emergency Medicine 2011-204	12/5/2011	Internal Control Assessment certification; non-certified effort reporting; purchasing; P-Card transactions; gross pay register reconciliation; statement of activity reconciliation; delegation of authority	September 2012
U-M Hospitals and Health Centers Valet Parking 2012-107-2	3/26/2012	Reconciliation practices; vendor employee use of patient/visitor parking space; valet parking vouchers, imprest cash fund and cash handling practices; annual certification of internal controls and gap analysis; background checks on vendor employees	December 2012

UMHHC Community Health Services- Community Programs and Services 2012-214	6/28/2012	Monitoring loan activity; cash handling practices; credit card controls; interpreter services program; monitoring accommodations activity; training and performance evaluations for hospital volunteers; annual certification of internal controls and gap analysis	March 2013
Office of Medical School Education 2012-105	6/29/12	Restricted funds; financial aid; admissions; payroll controls; financial training	March 2013